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# A Study of the Causes and the Treatment of Failure in Ninth-Grade Science

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A STUDY OF THE CAUSES AND THE TREATMENT  
OF FAILURE IN NINTH-GRADE SCIENCE

by

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A THESIS SUBMITTED IN  
PARTIAL FULFILLMENT FOR THE DEGREE OF  
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## Chapter I

### Statement of Thesis Problem

"He is a success" and "he is a failure" are common expressions used to describe people in all walks of life, and, seemingly, in all occupations from the president of a bank to the laborer digging up the street in front of it. Perhaps some people spoke of our early ancestors in a similar vein, spoke of their success or failure in bringing home a fatted calf or slaying a mighty wolf.

Many teachers also use the terms, "success" and "failure," to describe various students. If we listen to the conversation at the lunch table in a high school, we frequently hear these terms. As teachers, we at times set up certain standards, and the ability of the individual pupil to attain these standards determines how he is labeled. At times, the attainment of the standards determines the pupil's passing or failing in a subject.

There is an extensive bibliography on the subject of failure. Some authors describe various plans which might be used to prevent students from failing; others tell what should be done with students who have failed; others tell of the causes of failure; others describe the characteristics of failing students.

As a high-school teacher of general science, the author has had the customary failures in his classes. There has never been the feeling that just the right number had failed and just the right number had passed. There has never been a desire to "lower standards" by passing all students regardless of their accomplishments; nor has there been a desire to set standards so high that vast numbers of students are required to repeat their semester's work. An attempt was made to reach some middle ground, and fail only those students who deserve to be failed. But failures have always been a problem. Perhaps no student deserves to be failed.

During the last school year (September 1930 - June 1931) an attempt was made to reduce the number of students who failed, and yet maintain the same standards of accomplishment which have been used in other years. During the September - February Semester, some of the procedures to be later used in the actual study were given a trial.

The actual study was conducted in two parts, as follows:

- I. Survey of the literature on failures, particularly as applied to the ninth-grade level.
- II. Development of a plan for studying causes of failure in general science.

By this study, it was hoped to develop a procedure which a classroom teacher might use to reduce the number of failures in 9A general science classes.

Included in this study will be found a survey of the literature on failures -- numbers of books, reports, and articles were read and analysed. Some of them seemed to have greater value than others, as is indicated in the body of the thesis. There is also an analysis of the textbook used in the General Science classes at Englewood. The textbook was analyzed to determine whether or not it played any part in the failing of pupils.

## Chapter II

### Introduction

A questionnaire, submitted by the United States Bureau of Education to all superintendents in cities having a population over 10,000, gave the following results. Of the two hundred and eighty superintendents replying to this questionnaire, forty-four stated that they were using the Dalton Plan, or some modification of it, while forty-two said that they were using the Winnetka technique or an adaptation of it. (81:128) Thus many different attempts are being made to take care of individual differences. It might be better to state that some school systems acknowledge the existence of such differences.

As in the case of many such questionnaires, some allowance will probably be made for enthusiasm on the part of school superintendents. Most of us enjoy appearing in a favorable light, and the superintendents may have had a limited understanding of the Winnetka or Dalton Plans.

It may be well at this point to refer to the fact that our present educational structure was borrowed from Europe about one hundred years ago. The idea of large numbers in classrooms has come as a result of economy, and many student ills have resulted from our neglect of the individual student. When we

give intelligent consideration to individual differences many of the present ills will vanish. (17:691-696)

The great need of the race will probably be found in the development of average intelligence. The bright people will prosper anyway. It is the duty of our public schools to encourage, nurture, and care for every pupil. It is a crime to discourage a poor student because of his failure to be brilliant in scholarship; his great need is encouragement. (113:486-490) Mr. F. H. Palmer, who advances the above theory, may be a little over-emphatic in his statements, but many educators agree that the poor student needs encouragement.

The other side of the case is advanced by H. S. Cowling (36:760-766) who writes as follows: Boards of Education spend more money on worthless pupils than on pupils of superior ability. We ought to impress the idea of expense on pupils and parents. We might make the pupils pay for a course which they fail.

Some argue that impressing school cost on a child might encourage rather than discourage him. That is, if both child and parent were made to realize the value of schooling, this might develop a more eager attitude on the part of the child. The cost-of-failure theme has stirred up several of our educators. Writing about the cost of failure in the City of Chicago, Don C. Rogers (135:273-277) states that the equivalent of about thirty schools are kept running in Chicago to care for



repeaters. From thirty-five to forty thousand pupils fail of promotion each semester.

The figures may not tell a complete story, since failing in one subject in the Chicago high schools may result in the non-promotion of the pupil that semester. However, a pupil does not remain an extra semester in high school for each subject in which he fails. In one extra semester of high school, the pupil might repeat and make up four subjects in which he had failed.

In a letter to the principals of Chicago public schools, William McAndrew, at that time, Chicago Superintendent of Schools, advises the principals to place every pupil in the grade where he will receive the greatest benefit. He also expresses a belief that repeating is expensive to the lives of the children. He claims that failures usually do no better work the second time they take a subject than they did the first time. (97:423)

In Baltimore, (46:145-147) there were 5,529 non-promotions in its white schools for the semester ending June 31, 1930. E. Douglass, in writing about this, states that not more than twenty-five per cent of these repeaters will profit. It seems that their growth might be slow during the time of repeating, since education is growth and growth involves continuity.

Trees seem to do little growing during the winter -- yet it is not claimed that trees do not grow despite this. Perhaps

there can be growth without continuity in the growth.

The advantages of acceleration are proclaimed in an article in "The School Review" (188:170-172.) Two comparable groups left a St. Louis junior high school and went to a senior high. One group had been accelerated; the other group had made ordinary progress. The marks in the senior high, on a percentage basis, were similar, despite an eight months' gain in time for the accelerated group. From this report, it would seem better to accelerate than to retard.

However, there have been cases of acceleration which did not turn out so well. B. C. Gruenberg (60:91-92) reports on why teachers promote pupils, and tells of a colored girl who was given the benefit of the doubt in various courses. The girl had a pleasing personality -- but she could not and did not do the stenographic work of the course in which she was nevertheless graduated. Gruenberg advises teachers to aid students, but not to allow the students to believe that they are doing satisfactory work when the work is not satisfactory.

The problem of marking the pupil for the semester seems closely associated with the number of failures. One author (182:487-488) claims that normal failures in the ordinary school course should be between five and twelve per cent.

An article in the "School Review" recommends a semester's mark based on three factors:

- a. Daily Recitation,
- b. Written tests -- at least four each semester, and
- c. Notebooks -- Library Assignments -- Project Reports.

The semester's mark should be one-third of the sum or average of these three. (47:221-222)

In Lockport, Illinois, the large percentage of failures constitute something of a problem. The results of a study of the percentage of failures in that city follows: (88:13-14)

759 Pupils Enrolled  
37% Graduated  
20% Graduated without failing in any subject  
63% Withdrew before graduation  
154 of these withdrawals had no failures.  
326, the remainder, had 1475 semester units of failure, an average of 4.5 failures per pupil.

If the pupil is considered as an individual, and emphasis is placed on his obtaining the education he desires and perhaps needs, it probably will be wise to give attention to those pupils who drop out of school. Pupils who enter a high school only to drop out after a few months, or a year, might be acclaimed as an indictment of that high school. Instructors in education have denounced high schools because of this pupil loss. This seems to be the case, particularly, when such critics are striving to show the need for junior high schools. "The holding power of the high school is one first measure of the success of the high school" states F. C. Ayres. (8:404-406)

Another phase of the problem is overgrading. Overgrading, in this case, means the placing of students in a class or grade which is too advanced for them. Children become dissatisfied by overgrading, and lose interest, due to inability to keep up with the group. (145:821-822)

Perhaps there will always be failures. However, if these failures are costly to the schools and to the students, if failure discourages the student, and if failing does cause students to stop their school -- and these claims are advanced by some, -- then the problem seems to deserve the most serious consideration.

From "The School Review" (183:13-14) comes a report that 16 per cent of elementary graduates failed to enter high school; 70 per cent of those who did enter high school failed to be graduated at the end of four years. This report was garnered from forty cities.

A study of the 1920-1921 records of the Central High School of Syracuse, New York, (47:221-222) gives some interesting information about the marks of pupils who leave school. The grades were called either passing or failing. Few high marks were found among the group leaving school. One hundred and sixty-seven pupils dropped out. The percentages of those dropping out for the different school years follow:

Senior and Post Graduate...	6.6%	of all drop outs
Juniors.....	20.4%	" " " "
Sophomores.....	20.4%	" " " "
Freshmen.....	52.6%	" " " "

The number of subjects the drop-outs were failing in is given below.

20.3%.....	Left at once--no record
15.8%.....	Failing in all subjects
22.6%.....	Failing in 3 or 4 subjects
25.6%.....	Failing in one subject

Note. The total per cent is more than 100. No explanation is given.

### Chapter III

#### Causes of Failing and Retardation

In her book, "Dull and Retarded Children," Annie D. Inskeep (77:11) writes of the characteristics of the mentally deficient child, listing several characteristics of these handicapped children. Some of them are noted here:

a. Learns to walk late. Any muscular performance is learned slowly and sometimes incompletely.

b. Speech is usually slow in coming, and he often talks with difficulty. He stutters, stammers, and is reluctant to express himself.

c. His senses of touch, sight, and hearing are often more or less, defective. His senses of smell and taste are usually normal.

d. He is often inattentive, depressed, and apathetic. His "ambition span" is often very short.

e. He is not resourceful; his judgment, and ability to reason are usually poor.

In general, the mentally defective child lacks what Tredgold (156:423) calls "mental aggressiveness."

With these handicaps the mentally defective child has a rather bad time of it.

In the readings on the subject of failure, there are a goodly number of articles in which the authors give lists of the various causes for students failing in school. Some of these lists came from administrators, some were obtained from teachers, and some were secured by asking successful, as well as failing students, the causes for failing in school. Quite a variety of lists were obtained. Some of them are reported here.

Professor J. B. Edmonson (185:402-404), of the University of Michigan, has collected, from high school principals, a list of policies and practices which tend to increase the number of student failures. Included in the list are large classes, abnormal fear of failure, lack of uniformity of minimum requirements, excessive valuation of final examinations, poor selection of subjects, and poor teaching of subject matter.

It seems that most of the above might be modified. It might require some strenuous work to get a general reduction in the size of classes since it might increase school costs. The other causes, however, might be overcome by a little high-grade supervision, and education of the teaching staffs.

An investigation was made at Northwestern University (184:568-569) to discover the causes of failure. It was found that the general terms "too immature" and "mentally incapable" were too vague to be of much value and an effort was made to find more specific causes. Among the "causes" which were discovered were the following:

too little sleep; too much play; not enough study; too much leisure; fast eating; illness; financial difficulties; family troubles.

In the investigations it was also found that sixteen out of every one hundred students do not pass, but that the average intelligence of the passing group is only about the equal of that of the failing group.

The article describing this investigation was not in any way complete, and did not explain the difference between 'too much play' and 'too much leisure' or how 'fast eating' was a cause for failing.

The principals of public schools in Chicago who had a high percentage of failures in their schools gave the following reasons for this high percentage (135:273-277):

poor administrative conditions -- transfers;  
double schools; truancy; poor health conditions;  
poor environmental conditions; low mentality;  
racial and nationality difficulties; holding  
"weak" students to high standards of achievement.

In the "Elementary Schools Journal" (62:584-596) W. E. Hawley and L. A. Pechstein, list causes for non-promotion as follows:

- i. Transfers
- ii. Entering one school system from another
- iii. Unequal development of pupils



iv. Course of study

v. Teacher's judgment

Hawley and Pechstein included some incidentals which seemed rather important. They said that absences did not seem so important in elementary schools; that, usually, the failing child is weak; and that, when teachers err on failing, the mistake was usually on the side of leniency.

It might be quite difficult to get a general rule on how teachers err when it comes to passing or failing students. However, it seems that some teachers fail a very large number of students because of being overly strict; while other teachers fail very few, if any, and may be overly lenient. There doubtless is a group of teachers following a middle course. This seems to be true whether the percentage of failures is determined by the administrators, or by the individual teachers.

In the Detroit Public School system, the pupils were divided into X, Y, and Z sections. A report (49:747-754) is given of the characteristics of the bright and dull groups. Some of these characteristics are given herewith:

1. Bright

1. Alert, bright eyed, full of life
2. Good sense of rhythm and motor control
3. Taller and heavier
4. Less illness
5. More observing

ii. Dull

1. Lack sense of rhythm, lack poise
2. Too slow in games
3. Four times as many speech defects
4. Three times as many cases of enlarged tonsils
5. Environment affects them little

iii. Bright

1. Give better attention; have better memories, possess sense of judgment and reasoning ability
2. Can rate their own work
3. More resourceful
4. Interest is sustained
5. More broadminded; more tolerant of opinions of others
6. Courteous, friendly
7. Accept criticisms
8. Do not pick dull as partners, and vice versa

iv. Dull

1. Answer "I don't know" instead of seeking help
2. Lack initiative and sustained attention
3. Incapable of weighting values and foreseeing consequences
4. Fail to make up back work; learn slowly
5. Require more drill

It is possible that many of the characteristics of the

bright and dull students are the direct causes for their success or their failure. Other characteristics seem to be the results of other causes.

A study of maladjustment among college students (187:727-729) gives the following conditions as causes for the maladjustment: mental, physical, environmental, emotional. The article implies that, in the case of maladjustment, there is something wrong or deficient with one or more of those four.

The four "causes" might be used as headings to list the actual difficulties. That is, one study could be made to discover the mental difficulties; another, the physical difficulties; a third, the environmental; and a fourth, the emotional. The results of these four studies might well serve as guide posts in studying failures.

A study of failure by B. E. McCormick (98:431-442), by means of a questionnaire sent to teachers, states that eighty per cent of the failures in school are due to poor application.

Although the article does not so state, poor application may be due to a variety of causes. That is, poor eyesight, low mental capacity, gaps in earlier schooling, etc., may be the cause for poor application.

The reasons for students failing as given by teachers (54:108-112) follow:

attendance; failure on tests; lack of study; lack of effort; low I.Q.; and lack of home study.

The second reason given -- failure on tests -- seems merely to be evidence that the pupil is failing, that he is unable to do the work, rather than a cause for failing.

Two hundred pupils who had failed in the high school of North Fort Worth, Texas, (178:5-8) were asked to check, on prepared blanks, the cause for their failing in school. The blanks were unsigned. Teachers were also asked for their opinions. The numbers given indicate the number of times a cause was checked by pupils and by teachers.

#### CAUSES FOR FAILING

CAUSES -- <u>NEGLIGENCE</u>	PUPIL	TEACHER
Little studying in general.....	70	63
Poor effort.....	58	50
Lack of home study.....	58	37
No interest.....	45	14
Idleness.....	44	15
Poor concentration.....	44	0
Irregular attendance.....	39	84
Outside work.....	24	3
Laziness.....	11	29
Lack of sleep.....	3	2
Failure to hand in work.....	0	25
Inattention.....	0	6
Carelessness.....	0	7

CAUSES -- <u>NEGLIGENCE</u>	PUPIL	TEACHER
Loss or mislaid books.....	0	5
Cheating.....	0	2
Too much athletics.....	0	1

CAUSES -- <u>PHYSICAL AND MENTAL</u>	PUPIL	TEACHER
Dislike subject.....	73	0
Discouraged.....	66	0
Dislike teacher.....	58	0
Timidity.....	53	3
Slow in answering.....	50	0
Worry over studies.....	12	0
Low test grades.....	12	0
Poor health.....	6	11
Previous failure.....	0	78
Mentally slow.....	0	56
Immature.....	0	4
Depend on others.....	0	2
Overconfidence.....	0	2

CAUSES -- <u>HOME AND CLASSROOM CONDITIONS</u>	PUPIL	TEACHER
Teachers fail to explain.....	30	0
Not made to study.....	16	0
No chance to recite.....	12	0
Home conditions.....	9	5

CAUSES -- <u>ACADEMIC PREPARATION AND</u> <u>PROGRESS</u>	PUPIL	TEACHER
Poor foundation.....	40	31
Do not know how to study.....	29	26
Too many subjects.....	12	5
Late entrance.....	12	10
Reading ability poor.....	0	4
Wrong elective.....	0	3
Incorrect typing habits.....	0	2
Changing class.....	0	1
New surroundings.....	0	1

The list is comprehensive, and should be of some value. It is perhaps inadvisable to get pupils in the habit of criticizing teachers, and the filling out of a similar questionnaire might develop such a habit of criticism. However, it might be well for teachers and pupils to get together for a conference and to get a little uniformity in their ideas of why students fail.

C. A. Gardner also had the pupils tell why they failed (54:108-112). But in this case, the principal interviewed the failures and tried to get the pupils to tell why they were failing. The reasons follow:

Lack of home study; dislike of subject; little studying; discouraged; not enough effort; dislike teacher, etc.

It is possible that great numbers of pupils fail because of a dislike for the teacher, or for the subject, but from the standpoint of the teacher, it seems wise to go a little deeper. It seems wise to try and discover why the pupil dislikes the subject. It might be because he cannot see the board, or because he did not have enough previous training, or because he does not know the teacher. On the other hand the cause may be very remote. If the real cause can be discovered and corrected, the pupil will probably pass. Usually the passing of the pupil is the objective when the cause for failure is sought.

Another of the studies made of the causes for failure, as given by the students, is the one reported in the "School Review" (190:571-572). The causes given are: lack of home study; poor effort; laziness; and no effort.

A different report in the "School Review" (1:354-361) gives these causes as reported by pupils:

subject too difficult; did not like the teacher; did not consider it of value; failed to do back work thoroughly.

Now and then in these studies of the opinions of the students a rather interesting cause is given. The cause "failed to do back work thoroughly" seems to give a clue. Some of the writer's own students have, perhaps, failed because of neglect of back work, and, if this is as significant a cause as it seems to be, some consideration will have to be given to it

in studying why students fail in his classes.

Going to some of our educators for opinions of why students fail, one may obtain a variety of opinions.

Dr. Gilbert J. Raynor (131:402-404) believes that our compulsory education laws keep many unfit in school. This would seem to increase our failures.

Dr. A. Mortimer Clark believes students need more vocational training. This type of training, if better adapted to the students, might reduce the number of failures.

Dr. Ayres, and Dr. Strayer, profess to have shown that pupils do not progress at a uniform rate in our schools and gives the following causes for retardation (92:283-288):

sickness; physical defects; irregular school attendance; poor home environment; difficulty with the English language; a too rigid promotional scheme; lack of application.

Terman (92:283-288) thinks that retardation is a matter of intelligence. He states that little improvement in the pupil resulted from attacking the accepted "causes for failure."

Some of the causes of pupil failure so far given have been the result of philosophizing. They seem to be useful. Some of them offer suggestions which might very well be investigated. In fact, some of the "causes" are not so easily used. If taken individually, some of the "causes" are of little use in studying and eliminating failures. For example, using a rather



extreme case, consider an eighth-grade graduate. He would probably have great difficulty in passing a college course in analytic chemistry. His study habits might be good, or they might be of the worst type, but the course would be beyond him. In all probability, poor study habits might be the result of other conditions or might be an accompanying characteristic. In our ninth-grade science, some pupils might meet the same difficulty -- the course is beyond them and may need simplifying.

In writing about nervous children, B. Glueck (57:185-189) states that when the child's failure is due to carrying work beyond his ability, his nervousness is increased. Irritation and fatigue result when the child cannot do the work. He suggests that the unburdening of the child's mind often helps.

A friendly conversation carried on before, or after, the regular class period, often helps to lead to the cause of the failure, as well as helping to establish more friendly relationships in many cases. Some of the students seem a little bashful, and not quite sure of the procedure to be followed when they do not understand the work. This has been found to be true even when a special point has been made to train the pupils to ask questions. An attempt is made to break down the habit which, at times, is prevalent even among adults, of nodding their heads in an understanding way whenever new material, which is beyond their understanding, is discussed.

They do this in spite of their ignorance of the terminology or lack of comprehension of the new material. A conversation at times clarifies the situation for them.

The opposite side of the question is presented by S. P. Stryker (145:821-822) who reports the case of a twelve-year-old boy who came from a good, average home. He had lost interest in school work, probably as a result of being placed in too low a grade. Stryker reports that children lose interest as a result of this.

Maddocks (91:602-611) writes that a low I.Q. certainly seems to be at least a part of the cause for failing among some students. There is a high correlation between the mentality of a pupil and the quality and amount of school work he performs. If the above statement is correct, our problem seems to simplify itself, somewhat. The author (91:602-611) states further that failure in school work indicates a low type of mentality.

These ideas are somewhat at variance with those reported earlier in this paper. This author, C. W. Maddocks, seems to slight such things as interest, or the possibility of the student being a problem case with considerable natural ability, but who is not working up to his capacity.

G. C. Myers (108:300-303) states that intelligence tests have no very great prophetic power in school work. This would seem to indicate that there are factors other than intelligence that are of importance. He compares teacher ratings of pupils,

with ratings from intelligence tests. His experiment follows. The teachers were asked to rate or rank the pupils and tell how well the pupils actually got along. The correlations ran from 97 hundredths to 63 hundredths. This was considerably higher than those obtained from intelligence tests.

Apparently there is a tendency on the part of some of the school systems in this country to care for the child of low I.Q. There is a growing interest in these children. A rather unusual report from "School and Society" (179:547-548) gives the following figures on special schools for children:

In 1900, there were 29 schools with 10,217 students.

In 1922, there were 214 schools with 63,399 students.

This growth does not seem so very rapid, but does indicate that attempts are being made to care for these children. It is possible that the special schools may include such schools as those run in connection with orphan asylums, and reform schools. It seems safe to assume that the same classifications were used for both years. In this case, the report does show the growth.

H. T. Wooley and E. Ferris (173:1-22), in a report on the treatment and diagnosis of young school failures, state that it is better to study defectives and get them in special classes at the time of their beginning school -- first and second grade, if possible. The report lists four types of problem cases: neglected, high grade defectives, special defect, and psychopathic. They found that the I.Q. of these children fell when

they were put back into regular classes after being in the special classes.

In a study of special classes in the Detroit Public Schools, it was also found that the I.Q. of pupils in special classes decreased when they were returned to the regular classes of the school. C. S. Berry in his article reports (12:723-729) that those with I.Q.'s between 70 and 89 retained the same I.Q.

When the intelligence of students in special classes for repeaters was tested (48:139-140), it was found that seventy-five per cent of those in special classes had an I.Q. below 100 and the other twenty-five per cent had an I.Q. of 100 or over. The lowest I.Q. was 83, the highest was 110, and the average I.Q. was 94.

The subject of constancy of the I.Q. seems to be one of some controversy. It probably will be clarified some time. Because of the extensiveness of that subject, it is left to some one else to solve.

The results obtained in Detroit seem to be pretty well in line with the opinions of teachers. Some pupils seem to fail because of lack of native ability, while others, with more than average intelligence, also fail.

One feature reported in this Detroit article was that those in "special English classes" were inferior to those in the special classes for all other subjects.

Eaton (48:139-140) acclaimed two types of special classes

for repeaters. One class would be for the lazy but bright students, and the other class would be for those not gifted. This seems to be in line with his find of a range of intelligence, in these special classes, that went from eighty-three (I.Q.) to one hundred and ten.

Special classes might do considerable good in eliminating failures. The administrators of large high schools seem rather loathe to attempt anything of this sort because of the difficulties in arranging programs that might result. Perhaps some of them are satisfied to let conditions continue as they are. Special classes, they believe, might or might not get the desired results. But, if special classes will cause a controversy between the principal and the community, then special classes probably should be forgotten.

At the high school at Binghamton, Utah, an attempt was made to determine the cause of students failing. According to H. R. Atkin (7:363-364), ten failing students were given tests. It was discovered that these pupils were doing satisfactory work for the ability they had, but they did not keep up with the average of the class. This would seem to indicate that at Binghamton, Utah, the high-school students who were failing were all below average in mental ability. Unless the students there are above one-hundred in their I.Q. rating, it perhaps indicates that those failing are below normal in intelligence.

It sometimes happens that students who fail in one or more

subjects in a high school are sent to a principal or some assistant-principal, and an attempt is made to discover the cause for their failure. In one such conference between the assistant-principal and ninety-nine boys, who were failing, 12 questions were asked. A group of successful students were given the same questions. The material obtained is given below (58:715-720).

The failing students were, on the average, eleven months older than those not failing. It was also found that one-fourth of the failing students could easily do the required work; another fourth could do the work with effort; the remaining one-half of the students were mentally handicapped and not capable of doing the work of the class. The successful and failing students seemed to spend about the same amount of time in home study. The failing students do not go in much for clubs or social affairs. In thirty-six per cent of the cases, the failing students were smokers; only four per cent of the successful students smoked.

The failing students probably had to be a little more accurate in their answers than did the others. Those failing were interviewed. The others merely answered a questionnaire. In answering a questionnaire, pupils sometimes give the answer they think is wanted although the answer might vary slightly from facts. It might be impossible for those interviewed to neglect to state that they smoked when there was a strong odor of smoke about them.

There seems to be considerable doubt in the minds of the people quoted in this thesis about the importance of the I.Q. in diagnosing failures. From the reading available on the subject, the writer concluded that some students fail because of a low I.Q. Others fail for various assignable reasons. In the investigations in this study, it seems advisable to check and determine the intelligence quotient of those failing. This is done later in this thesis.

If the reason for failing is not a mental handicap, it may be an educational one. The possibility of "gaps" in the student's previous training is presented by F. N. Freeman (53:735-745) as an explanation for differences in achievement.

This would seem quite possible in subjects such as arithmetic or foreign languages. In such subjects the work of any semester after the first one depends, in part at least, on the work of previous semesters. General Science in the ninth grade does not seem to be a "built up" subject like arithmetic. A student might get along quite nicely in General Science without any previous science training.

Gaps in training may result from frequent absences. "How can you expect to get the work if you are never here?" remarked a teacher of Latin to a student who had been absent. The teacher, of course, did not mean that the child was never in class, but that his absences were so numerous as to be quite discouraging to her.

Carl William Ziegler (176:297) made a very complete study of school attendance as a factor in school progress. The study was in three sections:

1. Survey of the literature in the field
2. Relationship between attendance and progress in a particular grade in a city school
3. Importance of school attendance compared with other factors

In his survey of the literature, Ziegler reports as follows (176:14): "Strayer and Thorndyke, however, concluded that the effect of absence is small until very large amounts of absences are reached." That is, an absence of four or five days during a twenty-week semester would probably not have any very bad affect on the pupil's progress.

The investigation carried on by Ziegler (176:38) showed that there were significant ratios between school attendance and such factors as school marks, school progress, environment of pupils, and economic status of pupils' parents. There was a close relationship (176:49) between school progress and school attendance, and a positive relationship between school marks and school attendance.

If it had been found that there were no relationship between attendance and school work, it would seem to show that there was not so much to be gained for some pupils by attending school regularly. It seems that there should be a close relationship between school attendance and school marks, and that,



if there were no such relationship, in ordinary cases, it would not speak well for the school.

Another factor involved in the causation of failure is the social factor. This includes the child's environment. Francis N. Maxfield (95:406-408) believes the home to be an important factor. "Is the child's home adequate?" is the question which he raises (95:406).

In his book "Educational Disability and Case Studies," Harry J. Baker (9:34) states: "Personal and social factors play a very important part in the disability of these coaching cases." In this statement he refers to pupils who were given special coaching as an aid to passing. And, again: "The detailed analysis showed that the personal and social forces had profound effects upon scholarship."

In our public schools the teachers can not control the factors of outside environment in any very important way. Teachers attempt to build up ideals and character and they hope, through these ideals, to influence the outside environment.

Many of the causes of failure so far discussed have had to do with the child, his native equipment and his development. It is supposed that a poor grade of work was the cause for the pupils' failure. The idea is advanced (20) that some failures are due to poor marking, i.e., to wrong marking. It is claimed that at times, the failing mark given cannot be justified. In his book, "School Provision for Individual Differences," Mr.

Broady seems to have referred to the passing or failing of a student according to the mark he receives on a final examination (20:37). "Promotions," he states, "should not be based on the results of final tests alone. Rather, observed achievement should be the main factor. A pupil may make a low mark in a written test in one or more subjects, and yet for his own good ought to be promoted."

This seems to be in line with the ideas of C. E. Douglass who writes that the "accident" of teacher's marks cause many failures -- that seventy-five per cent of the pupils failing under one teacher would pass under another.

As a matter of fairness to the child, he should pass if he deserves to do so. That is, under ordinary conditions in a high school, if the pupil has met the requirements of the course, he ought to receive his credit. Every teacher should strive to avoid any "accidents" that would unjustly deprive a pupil of the credit he deserves. However in elementary schools, there are factors such as social age which must be considered in promoting a pupil. This does not seem so important in high school.

There are schools where final examinations are frowned upon; there are others, where they assume too great an importance. There is probably some safe middle ground. In promoting or failing, the welfare of the pupil should always be considered. Some teachers make it a habit of giving the pupil the benefit of

any doubt when it comes to the question of promoting or of failing. This seems to be a good policy.

"Why do pupils fail?" does not seem to have any one good answer. Perhaps there are many contributing factors, such as low I.Q., gaps in previous training, poor study habits, lack of interest, and, at times, poor teaching.

In the literature on education, there are numerous references to problem students and problem cases. With the idea in mind that some students are problem cases because they fail and that some of our pupils fail because they are problem cases, a report is given here of some of the literature in this field. It seems to give some helpful information.

The "Survey" (57:185-189) describes a nervous child and states that such children are apt to be bothered by minor things such as clothes, lights, or temperature. These pupils are extra sensitive to ordinary stimuli. This nervous condition is aggravated if the child is distressed by being unable to do the work in school.

Teachers often lack an understanding of the child's problem. The conference recommended earlier in this paper should be of value in this connection.

The same article in the "Survey" states that failure may be due to some "handicapping attitude" on the part of the teacher. The writer has heard a teacher state that a certain pupil drives him mad. It seems quite possible that this teacher

irritates his pupil. It might be a sort of defense mechanism set up on the part of the teacher. The whole system of teaching, on this basis, assumes the appearance of a game with both sides trying to win and no set of rules for playing it.

Pupils who fail in school work constitute an important challenge to teachers and school administrators. Some of the causes of pupil failure have been outlined. The next part of this thesis will deal with the remedies for failure.

## Chapter IV

### Remedies for Failure

In the pages that follow, there will be given some of the remedies for failure which have appeared in several periodicals devoted to the subject of education. There is also material from a few books on education.

In some cases, the discovery and removal of the cause of failure is practicable; in other cases, the removal of the cause might constitute a very large problem; then, again a special line of attack is necessary to improve conditions.

Some of the causes for failure have been discussed. The discussion necessarily included means of correcting the failure. Together with the discussion of the remedies for failing material presented, in some instances, will involve a few statements about the causes of the evil condition.

An article in the "School Review" (3:653-661) lists some things that the secondary schools can do for students of low I.Q. Some of the suggestions follow:

1. Give them the most worth-while material.
2. Arrange short unit courses that show progress.
3. Meet pupils needs by means of elasticity in subject-matter.

4. Have concrete subject-matter dealing with real life situations.
5. Give distinct, plain, daily assignments.
6. "Conduct" the ideas to them.
7. Provide opportunity for drill.
8. Teach by rule and by imitation rather than by reasoning out general principles.

In general, in the case of failing students, emphasis should be placed on efficient habits, formation, wise counseling, and the following up of individual cases.

Practically all of these ideas from the "School Review" could be applied in the classroom, and would not require any special organization of the school. The second on the list -- short unit courses that show progress -- could well be used in the classroom. The material in any course could be broken up into real units. On completion of a unit, the child may well feel that he has accomplished something of importance.

In general, these suggestions from the "School Review" require that the school work be made specific and that it be put on a level which the child understands.

Roscoe Pullian (127:465-472), in an article in "Education," brings back a little of the older pedagogy. He made it uncomfortable for the failures by inflicting a series of penalties on them for not doing the work. It sounds something like the old system of keeping a student after school to make up any lesson

he missed that day. As practiced twenty years ago, it did annoy some of the students to stay after school hours and study a lesson. In a general way, however, no statement of the advisability of such a practice appears in his article. If some method of penalizing pupils who do not work was judiciously applied, it might help.

Pullian also states that the teachers should first seek the cause for failing in the pupil or in his environment, and then make an attempt to remove the cause, or set up something to render it innocuous.

Some of the conditions that Pullian said contributed toward failure together with some of the things that could be done to help the pupil handicapped are as follow:

1. Low Mentality. -- This group should be segregated. They should be given careful explanations, frequent recitations, help before school, special projects, and sympathetic demonstrations of how to prepare lessons. The class should be sectioned according to ability.
- ii. Poor Physical Condition. -- Caused by bad eyes, poor hearing, diseased tonsils, adenoids, bad teeth, underweight condition, anemia, bad posture, bad habits. The remedies include the services of a nurse

and an attempt to correct any defects. Bad habits should be broken. Pupils troubled with bad eyes or defective hearing should be seated carefully to help care for these difficulties.

- iii. Faulty Methods of Study. -- Often the results of inattention in class, day dreaming, impatience, work being done by parents. The remedies include frequent recitations. Conferences should be held with the parents and pupils to discuss difficulties.
- iv. Indifference or Hostility. -- The remedy is a friendly but firm talk. A general attitude of friendship, accompanied by absolute fairness, is helpful. A special effort should be made to interest the pupil.

The particularly important thing about Pullian's article is its advocating that much of the work be done in the classroom. It offers a practical method of handling failing students. The correction of physical defects is beyond the limits of my classroom, and will have to be neglected. It, of course, will be possible to seat the students to aid those handicapped by eye or ear defects.

In a general way many of the ideas presented in Pullian's article will be used in the thesis. Pullian made no attempt



to overcome some difficulties which other authors consider of importance. A few of these will be given attention in this study.

Some of the remedies given by several school principals in Chicago (135:273-277), who were asked to account for the low percentage of failures in their schools are:

1. Careful supervision
2. Trained teaching corps
3. Careful administration
4. Good health conditions
5. Good heredity

This study is interesting because it seems typical of reports which are filled in by teachers and principals. At times, the person making the report arranges matters so that only favorable reflections are cast on him. The first three in the list of remedies -- careful supervision, good teaching corps, careful administration -- reflect creditably upon the common sense and ability of the principals making the report. It is well known that an unusually large amount of the supervision and administration of the Chicago Public Schools is carried on by the principals; within limits the principals select their own teaching corps.

B. E. McCormick (98:431-442), writing in the "School Review," states that a study of home conditions with a subsequent use of the material obtained resulted in fewer failures;

and that study habits were also important. The study of home conditions helped because it gave the school a better idea of how to deal with the pupil. At times, the study of home conditions resulted in home co-operation.

Convince the pupil that the teacher wants to help him and some failures will be prevented, but the pupil must be studied as an individual (54:108-112). Here, it seems, is another example of good results that might be obtained by conferences or talks with pupils for the purpose of developing a better understanding between teacher and pupil.

In an article in "Education" by G. D. Houston (74:211-219), the selection of teachers and teachers classroom methods are given consideration. The best trained teacher should teach in the first year of high school. He quotes the statements of educators regarding the pupils who are eliminated from the school course and states that about one-half the pupils are eliminated by the end of the first year of high school.

Houston states that an important cause of failure is the pupil's lack of reading ability -- they can't interpret the words. Houston's recommendations involve three parts as follows:

1. The best teachers should be in charge of first-year students.
2. The English teachers must take the initiative in placing emphasis on analysis and interpret-

ation of thought.

3. Other teachers must share this responsibility.

They should do more than keep a catalogue of pupil's achievements. They should equip the pupil for promotion by concentrating on every weakness he discloses.

In developing this thesis the investigator, over a period of two years, talked to several hundred of the freshmen students entering the Englewood High School in Chicago. These talks emphasize the importance of the transition between the elementary and high school. The average student entering Englewood seems bewildered and frightened by the noise; the crowds in the corridors; the size of the building; the series of bells; the temporary lack during organization of a place to keep books, hats, coats; the various number of cards to be filled in; and by the seeming general disinterestedness of the other students in the school.

The school makes an unusual attempt to help the students adjust themselves to their new environment. Englewood has a visiting day for new comers during the semester before they enter high school, on which day the pupils are allowed to visit any of the regular classes; they have the advantage of special student sponsors assigned to aid and guide them during their first semester; they receive help from their division teacher during a thirty-five minute division period each day; they are

guided by a special vocational counselor, the dean for girls, and the dean for boys. These three devote almost their entire time to guidance work; and, yet, these entering students need more help.

A rather sensible plan is brought forward by M. F. McDonald (99:3-6) who believes that it is wise to keep together the pupils from the same school. He contends that this plan should be followed during the first semester, and that they should be given a sympathetic teacher who has had the advantage of elementary school teaching experience and, if possible, one teacher should teach two or more subjects.

McDonald's plan is especially designed to bridge the gap between the elementary and high school. The pupils would not have to learn so many teacher's names; they would not have to adapt themselves to so many teachers; they would not have to adjust themselves to so many fellow classmates; and they would have the advantage of an organization that is somewhat similar to that of our elementary schools. But most important is the better acquaintance the teacher would have of the pupil. There would be less chance of an attitude of laxity that might develop when there is a sudden break between the close room organization of an elementary school and the more open organization of a high school.

At all times in a discussion of failing, it must be remembered that students are individuals. At times, they are

regarded only as parts of a group, but in treating with problem cases, with pupils who have difficulty in getting along with the group, the pupil must be considered as an individual.

C. O. Davis (40:510-520), writing about the junior-high school, says that the school has not the provisions for meeting individual differences, involving different physical and social interests, that the school has for meeting intellectual differences.

Some of our schools at least try to care for individual needs and differences. "The individual method is old not new," writes J. S. Taylor (148:405-409), and probably refers to early education where there were no schools nor classes, but only teachers with a few scholars gathered about them.

Taylor (148:405-409) tells of our stereotyped schools, where we dish out the same food to all whether they eat it or not. To help overcome this difficulty, Taylor recommends that school people should first ascertain the capacity of the children, and give them all a chance by putting the fodder on the ground. He seems to believe, and there is probably good reason for his belief, that caring for the individual needs of children will aid them in passing in their school work. It seems sensible to believe that, by adapting the work to the individual students, better results will be obtained.

If a student fails, it often means that he did not do as well as some mythical standard person; that, as an individual,

he is not up to an imaginary standard. If the student is to be really cared for as an individual, the fact that he did not attain a definitely established level is not of prime importance. The important thing seems to be what the pupil has learned or accomplished. Perhaps our educational system is not wealthy enough to care for the individual pupil in an ideal manner. Again, the child may need group training rather than individual attention. At some time during his life, he will probably be part of a group which will expect him to respect its taboos and which will judge him by his ability or lack of ability to attain the level of the mythical "standard person." The child, himself, may regret his inability to adapt himself to a group.

Supervised study was once heralded as a cure-all for every teaching problem from discipline to oral reading. Administrators boasted of the supervised study in their schools. At times, however, the only supervised study to be found in a school was a study hall, with a seating capacity of three hundred, supervised by a good disciplinarian.

After the passing of the period of hysteria which follows many new ideas, a calm has come on the subject of supervised study. Some even denounce it, while others continue to praise it. As a possible means of reducing failures we, of course, considered supervised study.

Pieper (121:122-133), in the "School Review," tells of supervised study in natural science. He describes a method of using supervised study in a classroom, and lists ways in which it aids pupils in learning how to study. It helps to teach pupils how to study in training them in:

1. Listening to spoken word
2. Reading
3. Interpretation of observed phenomena in laboratory or outside the classroom
4. Organizing knowledge
5. Oral and written expression

It seems to be a problem in supervised study to get a teacher who knows when to give information and when to withhold it, who knows how to guide, supervise, and direct the child without doing the child's work.

D. H. Loree (89:377-386) reported on methods of discovering and removing specific causes of failure in ninth-grade science. He listed the students and picked out those who seemed to be obvious failures. He then treated these students individually.

An important part of Loree's treatment consisted of the development of a study program for each child. If a child is lost in the school organization or seemingly out of place, such a plan seems wise. A study program helps to make work definite and places a responsibility upon the individual pupil.

This responsibility placed on the pupil by the study pro-

gram can be checked and followed up. A pupil who wastes his time during a study period may be reported to his division teacher (a teacher usually in charge of records and attendance for a group of students). The division teacher usually communicates with the pupil's class teachers regarding the pupil's wasting time, and the pupil will probably be called to an accounting. But more important than this, is the feeling a student with a study program has when he enters a study hall -- a feeling that he must work on Spanish or some particular subject during the period. Nothing is to deter him that period. It is the hour to study Spanish.

There is another quite different way of treating failures radically different from the methods previously discussed. Some universities, such as the University of Chicago, have used this plan, but few high schools seem to use it. This plan requires the failing student to drop the subject in which he is failing or, in some cases, to drop out of school for a period. Some high schools encourage the pupil to drop one subject if he is failing in three or four. The hope is, naturally, that, by concentrating on the remaining subjects, he may pass in one or more.

G. C. Cast (29:84-87), in "School and Society," states that there is great waste in teaching students who are unfit to



benefit by the instruction. He believes that it is actually harmful to try to keep all children in school. He maintains that some pupils will develop habits of wasting time if the work is beyond them.

Cast (29:84-87) goes on to state that from one-fourth to one-third of the high-school teacher's time and one-half his energy is used up by pupils who ought to be dropped. He believes it is unfair to the other students to keep these unfit in school as the teacher's efforts are being wasted on an inferior product. The unfit should be eliminated according to Cast.

He believes that it neither possible nor desirable for all to have a high-school education. The person with a high-school education feels too good for manual labor. If every one was given a high-school education, it would tend to make our social organization top heavy.

The article is summed up, by Cast, with his theory of encouraging the good and dropping the weak and unwilling.

Cast, of course, is a radical in this view. Some claim that it is impossible to determine who deserves and who does not deserve the advantages offered by high schools. One might almost visualize the headlines of a newspaper denouncing our undemocratic school system if his theory was adopted. However, there probably is some point where it is unwise to encourage pupils to remain in school. Careful thought should be given to the case of any pupil who is to be advised to drop out of school.

W. C. Reavis (132:28-34) reported on the administrative care of failing students in a high school of Seattle, Washington. A modified form of the plan of having failures drop subjects is followed there. If a student does not pass in three major subjects and gymnasium during any semester, he is placed on probation during the following semester. Failure at any report-card time during the semester of probation, will result in the pupil being dropped from school. He must remain out of school one semester after being dropped.

If the student who was dropped from school on account of failure really wishes to study and make up his school work, he may enrol in one of the ungraded classes provided for him. These ungraded classes have proved very helpful, the report states. This plan of probation might encourage the older high-school students to concentrate a little more on their school work.

Reavis refers to the students eighteen or nineteen years old who have been in high school for four or five years and who have accumulated not more than two years credit. The ungraded classes would seem to be very valuable to students who had gaps in their education -- gaps which need to be filled in before the student can really progress in his work.

There are state regulations compelling pupils to stay in school until the ages of twelve, fourteen, and sixteen, depending on the state. As long as the philosophy behind these laws

is upheld, it seems inadvisable to drop students from school because of failure. It might encourage students to fail because of a desire to evade the law.

Another plan offered to combat failures is that of different curricula for different groups. This might involve two or more courses of study with the slow group completing only the minimum essentials and the fast group getting a greatly enriched course (16:506-512). The different courses would have to be adapted to the mental ability or learning capacity of the pupils; otherwise, such courses would be of little value in reducing failures.

At Seattle, Washington (69:216-221), a clinic was started to examine the school children with the idea of aiding in their proper placement in special classes. The purposes behind these special classes were as follows:

1. To observe the child to determine his possibilities of development
2. To increase school efficiency through the elimination of the unfit
3. To stimulate mental growth through differentiated courses of study
4. To promote happiness of the child
5. To prevent economic waste by teaching children to help themselves
6. To safeguard the child and society by

influencing the parents to segregate those children who will never be self-supporting

These classes at Seattle were specially organized for mental defectives. This would seem to include subnormals and other students who were very backward. The plans are of no particular benefit in this study. They do express an attitude or feeling of what should be done with those students who seem absolutely incapable of accomplishing anything worth while in regular classes. There are such special classes for backward children in the elementary schools in Chicago. No reference can be found relative to such classes in the Chicago high schools.

Pullian (127:465-472), states that the key to the whole problem of the failing child is to study the case of the individual, and, by this study, find some means of correcting the child's difficulties.

Many times, in reading articles and books on this subject of failing students, the idea of studying the individual case has been suggested and noted. Sometimes a conference is the method; sometimes, some sort of questionnaire is used; others, observation of the child at work is recommended. All of these methods seem useful.

Gary C. Myers in "Child Welfare"(107:543-546) writes that in elementary failure the problem is to arouse the pupils' "urge." Myers would develop an "urge" for regular hours -- being on time for school, having books and supplies in class,

handing in work on time, and doing his lessons at regular hours. Myers also advocates an attitude of good cheer on the part of the teacher toward the child. The failing child should be congratulated on his good work while some of his bad work could be overlooked in order to give him the joy of feeling successful, according to Myers.

In the "School Executives Magazine," John C. Unger reports on ways to reduce high-school failures. He outlines a program as follows (158:297-300):

1. Develop some understanding of what constitutes a failure.
2. The teacher must meet four requirements to bring success to the students:
  - a. Be sympathetic and sell the course to the pupils
  - b. Realize the importance of the assignment
  - c. Be willing to take time to teach pupils how to study
  - d. Be willing to take time to meet the child alone and see the child's problems through eyes of the child

Unger also gives some specific remedies for difficulties that arise, as follows:

Difficulty

Remedy

Habitual absence.....	Notify parents
Failure to prepare lessons....	Make daily grading important, ask parents to require a definite study hour at home, and have supervised study at school
Poor study habits.....	Have teachers teach pupils how to study
Too many outside activities....	Reduce the number of activities in which the students may take
Wasting time.....	Careful supervision
Poor class attention.....	Eliminate the old "recitation," and give each pupil a chance at "self-expression"
No desire for education.....	In part, is a problem for parents; make a study of pupil's traits

The suggestions of Unger (158:297-300) seem to be quite practical; they do offer some practical remedies. In classes in Education, teachers have been criticised for attempting to adapt in its entirety a plan that is working some where else. In spite of this, there are parts of Unger's plan which perhaps, might serve a good purpose in many classes. His ideas seem to be ideas of a teacher who found them useful and workable.

It was intended, in making the investigations of this thesis, to make case studies of those students who were failing; it was therefore thought advisable to get some material on case studies in order to have a better basis for this work. Ideas were wanted on the actual procedures used by others in making case studies. Some of the material obtained from this reading

has been incorporated in this thesis.

Margaret M. Alltucker (3:653-661) writes that the extension of compulsory education laws has brought many students of low I.Q. into the high school. She believes that case studies should show the following points:

1. I.Q.
2. Previous scholastic accomplishments
3. Physical development and health
4. Record of after school and vacation employment
5. Record of home and neighborhood conditions.
6. Economic status of the parents as well as their plans for the child's future, and
7. The child's interests and ambitions.

Some case studies reported in the "Psychological Clinic" (30:) presented material on the correspondence or relationship of school achievement to industrial efficiency. This report states that the I.Q. and the M.A. are not infallible measures of capability in school work and that the pupil who is an unsatisfactory worker in school is usually unsocial, unreliable, destructive, and immoral. The pupil might fail because of these conditions, or might set up the conditions as a sort of protective barrier against the social consequences resulting from his failure.

A case study reported by Watson and Phillips (162:) gives a school history, a medical history, a list of day dreams, and

a psychological study of the pupil. In this case study it was found that an eight-year-old boy could not read. This, of course, lead to various difficulties in connection with the boy's school work.

A very unusual case study is reported in the "Psychological Clinic" by Arthur Phillips (19:83-95). Marjorie, a nine-year-old girl, was fearful and apprehensive in her attitude toward the external world and was also troubled with a speech defect. Another case reported in the article was that of Ellen, an attractive, fifteen-year-old girl who had anemia. Like Marjorie, Ellen was beset by fears. The part of the article which seemed very enlightening was the statement that Marjorie regarded the teacher as a friend and confidant. This aided materially in the cure of her special difficulty which had prevented success.

These case studies by Arthur Phillips showed that it was possible to conduct case studies without any elaborate equipment and also showed the advisability of proceeding slowly and thoughtfully. If the investigator proceeds in this careful and thoughtful manner, many things may be observed concerning the case that will aid in curing the individual of the troubles that have caused failure.



### General Summary on Failure

1. There are a great many students in our schools who fail every year.
2. Failures are expensive.
3. A great many studies and attempts have been made to reduce or eliminate failures.
4. Students fail in school for a variety of reasons.
5. Among the reasons for failure are the following:
  - a. Poor or defective physical condition of the pupil
  - b. Poor attendance of pupils
  - c. Excessive individualism on pupil's part
  - d. Gaps in previous education of the pupil
  - e. Mental deficiencies of the pupil
  - f. Deficiencies in the teacher
6. Failures are treated in a variety of ways.
7. Some of the ways in which attempts are made to reduce failures are as follows:
  - a. Lower the standards of the school
  - b. Study those students who are potential failures and provide individual work adapted to them
  - c. Eliminate failures from regular classes
  - d. Provide special classes for students who fail

## Chapter V

### Textbook, Laboratory Activities, And Examinations As A Possible Cause Of Failure

In the beginning chapters of this thesis there was presented some of the causes for pupil failure, followed by a discussion of some of the remedies for these pupil failure.

In continuing the investigation of the cause for pupil failure, it was thought wise to consider the textbook used in the general science classes at Englewood. In the pages that follow, there will be found this study of the textbook. A brief report is also given concerning the laboratory activities and the type of examination questions used in the writer's classes. These studies were carried on for the purpose of discovering possible

causes of failure which may be ascribed to the textbook, laboratory activities, or the examination questions .

### The Textbook

"Books", writes Elizabeth L. Woods (171:1), "are essential tools, and basic texts are well nigh indispensable aids in many fields of study. To adhere to them slavishly is fatal to good teaching. To choose them carelessly or sentimentally is to break faith with the very principle of good teaching."

Among the earliest of science textbooks, according to J.H.Gardner (55:149-50), was a sort of science catechism which was used in Philadelphia and Brooklyn about the year 1851. One of the questions and answer from the book follows:

"Q. Why are the ill-clad also instinctively averse to cleanliness?"

"A. Because dirt is warm (thus pigs who love warmth are fond of dirt). To those, therefore, who are ill-clad, the warmth of dirt is agreeable."

Perhaps seventy-five years from now, some of our present day textbooks will sound just as humorous as the "science catechism" sounds today.

In the days when the New England Primer was the chief text used in the schools, the teacher alone often did the selecting of the book, and there apparently was little restriction placed on the teacher in his making this selection (15:9-122). This, of course, was a period when there were few textbooks from which to choose.

After the Civil War period, there was new activity among the schools of the country and with the new activity there developed more regulations for the schools in the selection of school textbooks. In that period after the war, many publishers and many textbooks began to appear. The publishers organized effective sales forces, and a keen competition developed, writes A. I. Branham (15:58-59) in an article in which he traces the development of our textbooks.

After the year 1900, more consideration was given to the methods of selecting textbooks, but it was not until the year 1910 that a number of articles began to appear on this topic of textbook selection.

According to the Thirtieth Yearbook (194:143-162) the score card is the natural successor to the haphazard method of selection that existed prior to 1910. Today, the score card is perhaps the most widely used guide for the selection of text-

books. Eighty-four out of one hundred and fifty superintendents who replied to a questionnaire on this topic approved of the score card.

Score cards and their application are, of course, open to criticism. P. A. Knowlton (82:248-252) writes that a score card can be made to look like the most objective instrument on earth, yet it will involve a perfect set up for the book you want adopted.

Score cards apparently do one important thing. They set up certain criteria as the basis for the analysis of a book, and according to the Thirtieth Yearbook (194:143-162) unless there are such criteria, the objectives of the school system may be lost sight of in the selection of the books.

The development of the score card for textbooks, probably marks the introduction of the scientific method to textbook selection. Among those who have made score cards or written articles on the subject of textbook selection are the following: Campbell (26:2404-2407); Herriott (66:15-20); Johnson (80:104-108); Ingraham (76:367-368); Knowlton (82:248-252); Nettels (109:10-14); Rader (130:298-304); Weber (163:678-84); Whipple (164:51-53).

Among the most common items found in the score cards discussed in the literature on that topic are the following:

- i. Mechanical features
- ii. Subject matter

- iii. Aids or helps for teachers and pupils
- iv. Adaptability to pupils
- v. General considerations such as: author,  
publisher, date of publication.

As the result of a study of various score cards and of a study of the literature on the topic of score cards, the author of this thesis developed the score card that follows. It was thought advisable to make this score card in connection with the study made of pupil failures. It was believed that the textbook used in the author's classes might present difficulties which could cause pupils to fail. Some items included in a general textbook score card are omitted because of the special nature of this score card.

#### A Score Card Used To Discover Points of Difficulty For Students

##### Words

This item is used chiefly to discover vocabulary difficulties. In writing about the vocabulary of textbooks, Buckingham (22:142) writes "The textbook contains too many hard words." Kyte (84:533-546) believes that pupils have difficulty in understanding certain textbooks in seventh grade history because of the vocabulary of these books. Powers (124:368-382) believes that the vocabulary burden of science books is unnecessarily large.

These ideas about the difficulty of the words in certain textbooks are rather common among the writers on this topic. Some of the other writers who discuss vocabulary difficulties are the following: Thorndike (153:239); Thorndike and Symonds (155:438-445); Keboch (81:22-26); Braum (16:408-411); Patty and Pointer (116:127-134).

In checking possible vocabulary difficulties, the common practice seems to involve the random selection of a number of words of the book surveyed. The words in the list obtained by this sampling are then looked for in the Thorndike Word Book (154). If all these words were found to be among the first thousand of Thorndike's list, it would be assumed that the vocabulary of the book was quite simple.

Words found to be in the second or third thousand of Thorndike's list are, of course, more difficult; words not found in the list are, of course, still more difficult. Thus the vocabulary difficulty of a book is rather objectively determined. A plan similar to this is used in the vocabulary study reported in this thesis.

### Sentences

The structure and length of the sentences of a textbook may involve problems for pupils. Bennett (11:288) writes that a textbook "should present its statements in the most direct, clear-cut and dignified manner appropriate to the understanding

of its readers."

Sentences of textbooks seem to present two problems which require special study:

- I The number of words in the sentences
- II The sentence structure -- that is, whether the sentences are simple, compound or complex in structure

These problems and the measurement of the problems are discussed by Peterson (118:) in his score card; by Herriott (66: 15-20) in his score card; and by Nettels (109:10-14) in his discussion of the selection of a science book for eighth grade science classes.

The study of possible sentence difficulty involves the actual counting of:

- I The number of words in various sentences which have been selected at random
- II The percentage of simple, percentage of compound, and percentage of complex sentences in a group of sentences selected at random. The random sampling should be sufficiently comprehensive to give a fair estimate of the sentences of the book.

### Index

When the index of a textbook is studied to determine the quality of this index, the point that is usually considered is its completeness. In many of the score cards studied, the



index is given consideration. However, although the index is mentioned in the score cards, very often no statement is given of methods of measuring the completeness of the index.

Of course, the completeness can be rather easily determined by selecting from several pages of a textbook items that ought to be included in an index and then looking for these items in the index. What the index should contain and how the completeness of an index can be measured is discussed by Johnson (80:104-108) in his rather comprehensive article called "A Checking List For The Selection of High School Textbooks"; by Whipple (164:51-53); Peterson (118:); by Maxwell (96:343-345); Campbell (26:2404-2407); and by Rader (130:298-304).

### Self-testing Exercises For Students

By self-testing exercises for students is meant exercises or questions which the pupils may answer or attempt to answer and by their answers determine their knowledge of materials studied.

The advantage of these self-testing exercises seems to be a psychological one, and closely connected with the value of recitation in memorizing (172:296-365). In their book on high school tests, Ruch and Stoddard (134:44) write "Learners improve most rapidly when their successes and failures are known to them at the time of practice."

These self-testing exercises are listed in score cards and

articles by Whipple (164:51-53); Johnson (80:104-108); and Campbell (26:2404-2407). Referring to textbooks, Bennett (11:287) writes "They should provide simple tests by which the individual may know when or to what degree the aim has been accomplished."

It can be determined whether or not a book has these self-testing exercises by a survey of the pages of the book.

### Introduction To New Material

From a psychological point of view, it seems quite necessary in textbooks to prepare the way for the introduction of new topics to the pupil by statements that bridge the gap between the old material, and the new topics to be studied. Without this introduction, pupils would apparently have difficulty in comprehending the material. In Des Moines, Iowa, (192:152), the ability of the pupils to comprehend the material is listed as a topic for score cards made and used in Des Moines. Ellen M. Freeman (52:282-294) writes that authors of geometries attempt to apply principles in passing from one of these principles to another; train pupils in logical thinking by use of developmental material; and try to establish a concrete basis for the beginning of demonstrative geometry. It would seem wise for general science textbook authors to adopt these ideas and apply them to the books they write.

In a criticism of general science books, Wyman (175:29-31)

writes that in the books he observed, there was a lack of sequence in presentation of major and minor topics. It seems possible that some of this "lack of sequence", could be cared for by proper introductory material.

Johnson (80:104-108) lists "subject matter" in his checking list. The method of presenting the subject matter should be considered under this general title. He writes that the introduction should arouse curiosity, and interest and should show what may be gained by a study of this material. Colvin (32:376) writes "The teacher should make sure that the pupil, before he begins the detailed study of a lesson, knows in general what the lesson is about."

### Study Outlines

The value of study outlines is suggested in the Thirtieth Yearbook (194:143-162) in its discussion of textbooks. Waples (161:128) writes, "Unless supervised to some extent, most pupils acquire wasteful habits of study; that is, they do not observe such common rules of efficient study as the following:- form a definite idea of the desired result; have a specific purpose; grasp the meaning of new ideas by organizing them with previous experience; adopt a critical rather than a merely receptive attitude toward new ideas; memorize from the general to the particular; etc." Good study outlines would seem to care for some of these difficulties.

Colvin (32:362) writes, "When a pupil is not directed in his work he often acquires blundering and wasteful methods of study." Johnson (80:104-108) writes that there should be study helps consisting of problems, questions, and topics suggestive of life situations in all good textbooks. Whipple (164:51-53) lists suitable teaching aids as a requirement of acceptable texts. Study outlines would seem to be included under this heading.

An article in "The American School Board Journal" (192:152) in a list of five general principles to be followed in the making of a score card includes the value of the method of the textbook in directing the learner into right habits of study. Payne (114:598-604) writes that pupils should be taught how to study in class and out of class. Study outlines in textbooks would, of course, be a valuable aid in teaching the pupils to study. At home, when the teacher is far away and the pupil has only a textbook to help him, is a time when the pupil needs the aid of study outlines.

These statements and articles stress the need for direction of the student in how to study, and stress the need for outlines to assist the student. Many of the score cards point out the need for study outlines. Whether or not a textbook has study outlines may be determined by a survey of the book.

## Drill

The quantity and the quality of the drill material presented in a textbook is acknowledged as a necessary factor to be considered in textbook selection by Johnson (80:104-108) when he writes that the drill material should be selected with regard for relative values; that it should be suggestive rather than exhaustive; and that it should meet the varying capacities, interests, and needs of the pupils.

Rader (130:298-304) in writing about scientific textbook selection refers to the "habituation aspect" of textbooks and gives as a subheading of this topic, skillful motivation of drill work as a requirement. Mort (106:195-265) mentions the need for drill in adjustments due to low mental ability. Waples (161:192) writes "That there is need for some drill in most high school subjects." and sets up some of the requirements for drill material and again (161:272) "The value of carefully graded exercise materials in the learning of skills or habits should be apparent to any teacher."

Colvin (32:178) writes that "Instruction without drill will not work. Remove every vestige of drill from the schools today and all learning would cease."

Many writers on education seem to support the contention that drill material is necessary and valuable. If drill material is present in a textbook, there is at least a possibility that the pupils will be given the benefit of this material. Many

teachers are very dependent on textbooks. At times, the amount of drill work given the pupils depends on the amount of drill material in the textbook used in the teacher's classes.

The amount and quantity of the drill material of a textbook may be determined by the random selection of a chapter of the book and the study and evaluation of that chapter.

### Explanations

Under the general heading of explanations, writers on textbook evaluation have included the explanations of words, laws, processes, experiments, pictures, diagrams, and technical expressions. These points are mentioned by Bennett (11:277-289); Campbell (26:2404-2407); Freeman (52:282-94); Herriott (66:15-20); Keboch (81:22-26); Johnson (80:104-108); Nettles (109:10-14); and Whipple (164:51-53).

In general, the points that serve as a basis for the evaluation of the explanations are Clearness, Understandability, and Completeness. It seems wise to check these points when grading the explanations. A chapter may be selected at random and the grading proceed. This process is suggested in many of the articles read on this subject.

### Descriptions

The topic of descriptions of textbooks is discussed by Freeman (52:282-94); Laylander (87:47); Wyman (175:29-31);

Nettels (109:10-14); Herriott (66:15-20); and in the Thirtieth Yearbook (194:143-162). The topic itself overlaps some of the other items. That is, the vocabulary of a textbook will have an effect on the interest of the descriptions; the effectiveness of the descriptions may be partly due to clearness of explanations; and the drill material might well effect the intelligibility of descriptions.

It was thought wise to include descriptions as a separate topic despite the seeming overlapping in order to make certain that some points not definitely measured under other headings would be certain of measurement.

The common method of measuring and rating the descriptions of a textbook is to study the Interest, Effectiveness, Accuracy, and Intelligibility of the descriptions. The descriptions would be obtained from some chapter selected at random.

In the pages that follow, after a summary of the parts of the score card, will be found an evaluation of Everyday Problems In Science (123:1-600) based on this score card.

#### Score Card For Determining The Points of Difficulty In A 9A

##### General Science Textbook (A Summary)

##### I Words

A vocabulary check based on Thorndikes Word Book.

##### II Sentences

##### III Index

- IV Self-testing exercises for students
- V Introduction to new material based on  
Completeness, Clearness, Illustrations, Interest.
- VI Study outlines
- VII Drill
- VIII Explanations of Technical Expressions, Words, Laws,  
and Processes.
- IX Descriptions to be checked for Accuracy, Interest,  
Intelligibility, and Effectiveness.

An Evaluation of Everyday Problems in Science Using  
the Scord Card Previously Discussed

Words

The list of words was made by selecting the first and last words on certain pages of each unit (chapter). A total of one hundred and twenty-four words was obtained by this random selection. Ninety-one of these one hundred and twenty-four words were among the first thousand words of Thorndike's "Teacher's Word Book" (154:1-134). This would, of course, signify that most of the words of the textbook were very common and that the ordinary ninth grade pupil should have no difficulty in understanding them.

The thirty-three words not among the one thousand most common words should not interfere with the pupils' understanding the book.

In general, on the basis of the sampling obtained, the



words of the book should not be a source of difficulty for 9A science pupils.

### Sentences

A count was made of the number of words in the first and last sentences on pages of each unit. A total of fifty-four sentences was studied. The average length of the sentences was eighteen words; the median length was nineteen words. In a study made of science books in Los Angeles (109:10-14), the sentences in the best liked book averaged twenty-three words.

The Los Angeles' study concerned books for the eighth grade in school. If eighth graders could understand sentences of twenty-three words, ninth graders should be able to understand shorter sentences. The book which was liked best in the Los Angeles' study might have sentences which the pupils could not understand, but it is probably safe to assume that one reason the book was well liked was because the pupils could understand the book.

It is possible that longer sentences would be better, but the sentences in the book under consideration in this thesis were not so short as to destroy continuity or to cause the pupil to lose interest.

Out of the fifty-four sentences selected in this study, twenty sentences or 42.5 per cent were simple sentences; nine-sentences or 35.1 per cent were complex sentences; and twelve

sentences or 22.2 per cent were compound sentences. The number of compound and complex sentences seems a little high. However, a study of the individual sentences does not reveal sentence structure that should confuse 9A pupils.

In general, the length of the sentences and the structure of the sentences should not cause any special difficulty for the pupils.

### Index

From pages 343 to 365 (practically all of Unit XII) all topics were selected which might and seemingly should be included in a good index of a book. These topics were then looked for in the index of the book in order to determine the completeness of the index.

Forty-one topics were selected from the unit; thirty of these topics were found in the index; eleven topics were not found in the index under the name of the topic. One of the eleven topics not listed under its own name (Keokuk Dam not listed under Keokuk or dam) was found under another topic (water power). The investigator does not believe that an ordinary ninth grade pupil would be able to take complete advantage of this listing. A more complete literal indexing would be advantageous.

In general, the index seems somewhat incomplete, and it is believed that a more complete index would aid the pupils. This

statement is based on survey of the index reported here, and on observation of pupils using the book.

### Self-testing Exercises

No self-testing exercises which would allow the pupil to check his progress from day to day or page to page are given in the book.

However, there are "preliminary exercises" consisting of questions on material to be studied. The investigator did not regard these questions of the "preliminary exercises" as self-testing exercises as self-testing exercises are usually conceived.

The lack of self-testing exercises may constitute a problem in caring for pupils who are failing.

### Introduction To New Material

In a unit selected at random, the general introduction to the unit and the introduction to each new topic in the unit was considered and evaluated on four points -- Completeness, Interest, Clearness, Illustrations.

At the beginning of the unit is a "story of the unit." This "story of the unit" in a general way hints at the topics which will be discussed in the unit proper. This introduction is made clear and interesting by relating the new material to things the pupils already know. The introduction uses terms

with which the pupil is already well acquainted. There is a plentiful supply of illustrations throughout the "story of the unit." The general introduction ("story of the unit") is complete, interesting, clear, and well illustrated.

In the body of the unit proper (after the "story of the unit") each individual introduction to each new topic discussed is on a plane equal to the general "story of the unit." New topics are carefully associated with topics with which the pupils are already familiar. This, of course, makes the topics clearer to the pupil.

The pictures and charts in the book are usually mentioned and referred to in the written material of the book, and this makes these illustrations a real part of the book. The illustrations are close to the written material which they illustrate.

Pupils should find the introductions in this book valuable. These introductions, both general and specific, rank high on the score card. There should be no cause for a pupil's failing because of the introductions in the book.

### Study Outlines

Near the beginning of the book there is a statement for the student directing him as to how he should study the book. In a general way this statement gives the pupil a procedure to be followed in using the book.

This "statement for the student" is probably too general to be of great help to the ordinary pupil. The book lacks any adequate study outline.

### Drill

Limited drill material is provided in the book. Much of this drill material is in the form of exercises which should help to make new ideas an integral part of the student's appreciation of the subject.

In a unit selected at random (Using Steam and Exploding Gas) one finds, after a problem on generating steam, a question on why water tube and fire tube boilers are used instead of cylindrical boilers with a fire beneath the cylinder.

Correctly answering such a question will require the pupil to discuss the construction of all three types of boilers. As the construction of these boilers has already been studied, this review will provide drill for the student.

At the end of this first problem of this unit, the student is asked to summarize the important ideas he has gained. Some drill is involved in this summarizing.

The next exercise of the book calls upon the student to make a drawing of a steam engine showing piston, valves, etc. The making of this drawing should provide drill on the construction of the steam engine.

The exercises just mentioned illustrate the type of drill

the book provides. The amount of the drill seems to be greater than is usually provided in general science books. It seems that many of these books are lacking in adequate drill material. The ordinary pupil seems to need more drill than even this textbook provides.

Explanations of Technical expressions, Law, Words, Processes, Pictures, Diagrams, and Experiments.

In a unit selected at random, it was found that few technical expressions, words, and laws are given. The authors of the textbook apparently leave the actual statement of laws and processes to more advanced textbooks.

In this unit that was checked, a mention is made of radiant energy. The book then gives an experiment which should make clear to the students what some of the effects of "radiant energy" are, without any actual definition of radiant being given.

On another page of this unit the following is found, "the light and radiant energy is transmitted through transparent material like glass or air; they may be reflected in part by water, light colored material, or shiny surfaces; or they may be almost entirely absorbed by dull, darkcolored materials (figure 32." And "figure 32" illustrates what happens when light or radiant energy is reflected or absorbed by these different surfaces. The textbook seems to avoid straight definitions

of terms and has few of them. However, when the book mentions a word such as thermometer, a few words of explanation of how the word was derived is given. Such explanations as are given are clear, interesting, and helpful to the student.

The experiments given are clearly explained, are simple enough, and are not complicated by additions of vast list of materials and apparatus. When a written description of the experiment might not be clear, drawings and illustrations accompany the explanation.

The pictures and diagrams usually are accompanied by explanations. Twenty-five of the twenty-seven illustrations in the unit had accompanying explanations. These explanations are clear and should be interesting to the pupil. The students observed obtained a fair understanding of the illustrations from these explanations. No special difficulty has been noted in this regard.

In general, the explanations of technical expressions etc. are adequate and should not cause pupils any difficulty.

### Description

The descriptions were judged from the standpoint of Interest, Effectiveness, Accuracy, and Intelligibility. The descriptions of the book are satisfactory on all these four points. Interest is developed and sustained throughout the textbook. From pupil observation in classes and in study halls, the

investigator discovered that the descriptions were very interesting to the pupils.

The effectiveness of the descriptions, seems to come from the realistic portraying of that which is described.

The intelligibility of the book was measured by seemingly casual discussions with many of the pupils. The book's descriptions were quite intelligible to the 9A pupils.

There probably should be no inaccuracies in any textbook. No pupil should be given a mistaken idea because of errors in the book. However, a college professor once remarked to a class that if a pupil could find a few mistakes in a textbook, that pupil might be more able to cope with life, for such a pupil would no longer place such undying faith in all that is printed.

W. T. Wyman (175:29-31) criticizes general science textbooks for their garbling of technical vocabulary. Such garbling may result in apparent inaccuracies which may give the pupils mistaken ideas.

No great inaccuracies were found in the book. In one edition, a star map was incorrect, and in another edition, a "circuit breaker" is inaccurately described.

These two inaccuracies will cause the pupils some little confusion. It is believed that the book is sufficiently accurate so that its inaccuracies will not be an important cause of failure.



### Summary of Textbook Study

In general, the textbook seems to present no special difficulty for the pupil. This may be said from the point of view of the score card and from pupil observation.

The following minor difficulties may be encountered in the textbook:

- I Incompleteness of index
- II Lack of adequate self-testing exercises
- III Lack of adequate study outlines
- IV Insufficiency of drill material
- V Possibility of inaccuracies

Although the textbook lacks certain things, as indicated above, one or all of the items could be cared for by the teacher in the classroom.

In addition to looking for possible causes of failure in the textbook, a study was made of:

- I The laboratory activities of the classes
- II The examinations given to the pupils by the teacher.

A brief report of these investigations follow.

#### The Laboratory Activities

There is practically no laboratory work required of the pupils in the classes. Almost all of the experiments must be performed by the teacher in front of the class. This is due to classroom conditions. Difficulties caused by pupils not under-

standing the laboratory activities are cared for in the general study of the cause for pupil failure reported in this paper.

### The Examinations

The examination questions, where possible, were given so that they were answered with yes or no; true or false; or a few words that completed the sentences. These short answer type examinations have been worked out with some care. If a pupil consistently fails on the short answer test, he is studied with more individual care and oral examinations and composition type examinations are given in these special cases. By this means, it is possible to discover whether or not the pupil is handicapped by the type of examinations given.

In general, a pupil who knows the subject should not fail because of the examination.

As a result of the investigations carried on in this thesis, there was developed a plan for studying potential failures in general science.

This plan is based on:

- I The study of general causes of failure
- II The analysis of the textbook, laboratory activities, and types of examinations employed.

The outline follows.

General Outline To Be Followed In Studying Potential Failures

In 9A General Science Classes

- I Determine I.Q. age
- II Test academic background including
  - A Reading (particularly)
  - B Arithmetic
- III Study immediate school background
  - A Absences
  - B Late start
  - C Contacts with other teachers
  - D Location in group
- IV Study psychological factors
  - A Possible inferiority complex
  - B Possible conceit
  - C Habit of failure
  - D Possible social antagonism
  - E Reaction to other pupils
- V Study the family
  - A Social history of individual
  - B Home
    - 1 Happy?
    - 2 Place to work?
    - 3 Neighborhood
  - C General state of mind of family
  - D Does pupil work to earn money?

VI Make physical tests

- A Sight (Attention must be given to eye strain and astigmatism.)
- B Hearing
- C Glandular
- D Cardiac
- E Malnutrition
- F Neurotic?

VII Study pupil in school

- A Class attitude
- B Habits of study
- C Attention
- D Equipment

## Appendix

### A Report on Several Potential Failures

Introduction  
To Studies of Pupils

During the time this thesis was being written, several students in the writer's classes who were failing in general science, were studied and observed. Although the studies were not carried on with scientific precision, it was thought that by these studies of failing pupils, some points might be discovered which would be helpful in reducing failures. These studies follow.

William

William was a rather ordinary looking colored boy, not quite seventeen years old, in the ninth-hour class in 1A General Science. He was spending his fifth semester in high school, and he had not yet completed the work of one year. He had failed in a variety of subjects during his time at Englewood.

He failed in his Science at the end of ten weeks. His work was very poorly done; he neglected in hand in his unit note book; his marks on his tests were very low; when called on to recite, he would casually glance up (although still slumped down in his seat) shake his head, and say nothing.

In an effort to determine a specific cause for his failing, William was observed during one demonstration of an experiment by a very competent pupil. A record was kept of William's attention to the demonstration. William was out of attention more than he was in. That is, he either watched other things in the room or stared into vacancy more than he watched the demonstration. He was not disorderly, except that his inattention to regular class work was not according to the teacher's directions specifically given during this experiment.

At the end of ten weeks an intelligence test was given to all of the failing students considered in this study, and, of course, William was among those who took the test. On the day on which the test was given, William stayed after class and

asked, "Why did you give me that test? Does it mean I am going to fail in Science?"

Time was taken to explain that the test had been given because the teachers wanted him to pass and that the test might help to explain to the teacher the cause of his failing. William still seemed to be a little worried.

As it was after school hours, he was asked if he had time to talk for a few minutes. He answered "Yes, sir." and there resulted the first conference with William. Some of the more significant points of that conference are given herewith.

William volunteered the information that he had been in the writer's class in 1B Science and the transfer of the class to another teacher, Mr. D., was mentioned. When William was told that Mr. D. had asked about him, he brightened up considerably and asked where Mr. D. was teaching. It was explained that Mr. D. was now a principal in a school out on Ninety-fifth Street. Mr. D. had told the writer that "William had done a lot of work for him," and William was asked about this. He did not answer but grinned a little and looked down.

With this as an introduction, the delving around to try and discover the reasons for William's not handing in his work began. William agreed that he liked the work, that it was not too difficult, and that he had time enough to do it. He said that he did not have the notebook ready on the day it was due, and so he did not "bother" to hand it in. He showed his note-



book to prove that it was not finished, but that it was otherwise in good condition. William had made no attempt to complete the unfinished work, although the unit had been collected some days before.

He admitted that he did not spend much time in doing his work, and then contradicted an earlier statement by saying that he did not understand the work.

The attention chart made several days previous during a demonstration by another pupil was taken out, and it showed that he had not given his attention to the demonstration. Then he was asked a few questions about the problems of the day preceding the interview. He knew little about the work of the previous day.

William was given a little talk about the teacher's attitude toward him, and how his teachers wanted him to pay attention so that he could understand the work and earn his credits. This talk seemed to impress him considerably.

As there was still apparatus on the laboratory table, the experiment of the day previous was repeated. Again he was asked a few questions about it. This time he had no difficulty in answering the questions.

William's face then brightened up and with a huge smile he said, "Why, that's easy, I can answer those questions." It is made clear to him that he could answer the questions because he had given his full attention to the demonstration and had

not let his mind wander or given his attention to other things.

William was rather well dressed and seemed plentifully supplied with pens, pencils, paper, and notebooks. He had given the impression of being rather emotional and so the two bits of information (emotionalism and apparent affluence) were considered together and an emotional appeal based on his apparent affluence was attempted.

The writer pleaded with William; told him how his mother worked to send him to school; reminded him of the fine clothes she provided for him -- the special sweater he wore, his fine fountain pen and paper; and the advantages he had which other boys of the class did not have. Again he was told how his teachers were interested in his success, and he was asked "to play square."

He seemed quite impressed and a little sheepish. As it was getting late, it was thought wise to close the interview so that William would not feel that he was being kept after school for punitive purposes, and he was told to complete the unit he had not yet finished, and turn in the completed unit on Monday. As it was then only Thursday, this would give him ample time. He promised to get the work in on Monday.

On Friday, he evinced a considerably greater interest in his work. On Monday morning before school began he proudly brought in the work. He was told that it would be looked over,

and he was asked to come in after school.

The work was complete but not well done. Some drawings were not clear; some answers were completely wrong; some answers did not answer the question.

When he stopped in the room after school, he was congratulated on getting the work done and told "to keep it up." He was asked if he wanted any help on the problem on which the class was working. As he seemed a little undecided, he was offered help in getting started.

With the aid of a ruler and a compass he made a very presentable drawing without much help. Other ways to improve the drawing, such as the printing of labels, explanation of the various parts of the drawing, and the value of using ink, were discussed.

The possible answers to the questions on the problem were talked over. He seemed to have a good understanding of this work, so the interview with William was concluded for that day.

On the regular printed failure notices that are sent to parents of Englewood students, a special note to William's mother was added. It said that he had possibilities, and that it might be wise for her to ask him about his work occasionally.

Several days later, William said that his mother was pleased with the drawing he had made after school. He showed me two more of his drawings that were equally good. He was given rather lavish praise. His attention during class was

much improved and his work from that time on was always passable. At times he seemed to become discouraged, but a little talk usually put him on the right path again.

William came tardy to class three days in succession without any reasonable excuse. Again a conference was held and it was found that there was no very good explanation for his coming late although he said that he had to come from a distant room. After William was told that the teacher had to make a longer trip between classes than he had, William was not tardy again.

Some weeks later, during a supervised study period, William fell asleep in class. He was awakened without being embarrassed and after class he was questioned. It developed that he was now working in a drug store and did not finish until eleven o'clock at night. A little discussion followed, and a program for doing his school work was made out. He did not start work at the store until five o'clock so it was decided that he should sleep in the afternoon from half past three until a quarter before five, and his homework was to be done during leisure moments at the drug store.

There was, of course, the possibility that his store manager would object. As William did not have to earn money, it was thought that it might be a good thing for him if some objection was raised that would end the unsuitable employment.

However, the store manager did not object, and William got some sleep.

For the rest of the semester, William got along fairly well. At the end of the semester, he passed without any difficulty and seemed quite happy in doing his work. The last day of school, he came in and said that his mother was very thankful for the help that had been given to him.

### Conclusions

William had enough ability to do his work. He seemed to need a manager. By observation, it was noticed that he did not give his full attention to his work in class; and it was decided that this lack of attention might be one reason for his failing.

When William really gave his attention to the class work, he had no trouble with the actual work but he was baffled by minor details such as how to use an index or start a drawing. He was instructed in these details during several conferences.

He was quite agreeable in disposition and took suggestions willingly. An attempt was made to teach him how to solve problems by himself, but there is some doubt about his response along this line of problem solving on his own initiative.

It is doubtful if he would have succeeded in his work without the friendly guidance he received for, at the time he was first helped, he seemed doomed to failure.

Frank

Frank was enrolled in the seventh-hour class three weeks late. From the very beginning he seemed to be in difficulties. He was a tall, thin boy who would soon be nineteen years old. As most of the boys in the class were about fifteen years of age, Frank was considerably over age for the group.

He looked underfed and undernourished. This appearance might have been partly due to his having grown very rapidly during the two previous years. Apparently, there had not been time for him to "fill out."

Frank's work seemed quite wretched and his attitude was one of indifference, but he was very respectful and polite to the teacher.

During periods of supervised study, the investigator began to make it a point to be near Frank's desk about twice as often as he was at the desks of other students. This could be done easily since Frank sat in the last seat in the row.

Frank seemed rather bashful, so the work with him was conducted very carefully, for fear of offending him. On a day when Frank came into the room a few minutes before the start of the class, the teacher casually went to the back of the room near his desk and engaged him in conversation.

The course that Frank was taking was talked about and what he intended to do after he was graduated was discussed. It developed that he was taking a four-year technical course, and

that he hoped to work as an electrician after graduation.

Frank was asked how he was getting along in school, his notebook was casually examined, and he was told to come in before school any time that he had work that seemed difficult to him.

Special attention was given to keeping him busy during class periods. During experiments, he was constantly called on to assist or explain; during supervised study when he seemed indifferent and to be making no progress, he was repeatedly urged to go on with the work. His work did improve. He did not seem to require much actual assistance, but rather, what amounted almost to a constant "nagging," yet it did not seem wise to "nag" him and so some other solution to the problem was sought.

A productive conference resulted from an accidental meeting between Frank and the investigator in the corridor one morning.

The boy was very frankly asked why he would work only when some one was driving him, and was told that he was a fine kind of an Irishman with no fight or spirit. This was done because it seemed that he needed to be excited about something; he needed to be aroused.

He complained that he did not get a chance to have any "fun." He had dropped out of Mount Carmel High School to go to work. After working for a little more than a year, he had

lost his job and returned to school. His father was dead and his mother worked to support the family. When Frank had worked, he had a little spending-money, but now that Frank was in school, he had none. He seemed to brood over the "cruelties of life."

The possibilities of getting "fun" out of his school work was suggested and he was shown some work other boys had done. The possible avenues to success as an electrician were explained, but it was insisted that any success depended on the quality of work done. The discussion became quite confidential at this point. Frank was told that irrespective of his work, he, personally was highly regarded by the teachers and that his success was the object they sought. Before the discussion ended, he was told that the Science room was always open and that he should come before school any morning when he wanted help.

After this meeting, Frank came in quite often in the morning and studied some lesson. Occasionally he asked for help in his English, his Geometry, or Science. After Frank had started to show improvement, other boys were sent to him to receive help and in this way quite a few of the boys became well acquainted with him. Several times Frank, on his own accord, repeated experiments for other boys. There was quite an improvement in the quality of his work, and a complete change of attitude on his part.



Near the end of the fourteenth week of the semester, his mother came to school. She inquired about Frank and was told that he was doing passing work; that if his work kept up he would have no difficulty in passing.

Frank's mother was quite talkative, told of many of her own problems and finally asked if Frank should stay in school. When told that he should, she seemed quite satisfied and told of the money it cost to keep him in school. She agreed that he was better off in school than on the streets.

As she seemed anxious to discuss Frank, the subject of spending-money was brought up and she was asked if there was any way he could get some. This matter was talked over for some time and she eventually said that she would see that he got a quarter a week.

Perhaps this helped to give Frank a little self-confidence, or perhaps he was now better acquainted with the pupils in the class, but he seemed to acquire a more friendly attitude toward others. He seemed to take an interest in things. By the end of the term, he was really a component part of the class and kept up his work with it. He had not only learned his Science, but he had also learned to like school and get "fun" out of it.

#### Conclusion

Frank had several difficulties. He entered late, had been out of school for over a year, was overgrown, lacked initiative,

and suffered a broken morale as a result of little recreation and too limited circumstances.

His big problem was his lack of interest in things, It was felt that if he once became a part of the group or if he became inspired enough to really accomplish something, he would progress more rapidly in his school work.

His reserve was broken down by friendliness, he was given no time to brood in class, friends were thrust upon him, and his mother gave him encouragement at home. He did his Science work and also acquired better social habits.

His interest not only in Science but also in other school subjects developed. It is believed that the special work done with him was mainly responsible for these improvements.

Gussie

Gussie was a nice, pleasant, carefully dressed girl. She had nothing to distinguish her from any one of a number of other girls. She seemed to conform to a common pattern.

She lived with her father and mother and attended Englewood with her sister. Gussie was taking a General Language course. Gussie said that she was taking that course because "a girl had told her to do so." Gussie expected to go to work after graduation from high school, but she had no idea of what kind of work she would like to do or what kind of work she could get.

Gussie seemed to possess no outstanding characteristics. She usually seemed to do her work during class periods and seemed to pay close attention to class work. She was quiet and in no way unmanageable. When spoken to, she always said "sir" and was thankful for any help given her.

When she failed at the end of ten weeks, it was difficult to see any reason for it. Her work was done and turned in on time, but it was not passing work. Her test marks were low; her recitations were unsatisfactory.

Gussie was observed at work during several class periods and all seemed satisfactory. She seemed to work diligently but slowly. When spoken to, she said her studies were "hard" and she seemed quite sincere about this statement.

Considerable enlightenment came as a result of the intelligence test. Gussie was considerably below normal, having a mental age of ten years and six months despite her chronological age of fifteen years. This would give her an I.Q. of around seventy. With this mental handicap, she seemed hardly capable of doing high-school work. But she was in high school, and she was in the Science class, and there was a feeling that something ought to be done for her, although what should be done was not clear.

In general, she seemed to need some extra help. She was encouraged to drop in before school for occasional help. An attempt was made to arrange an extra period for Gussie in the Science room while another class was covering the same assignment, so that she could have double instruction in the subject, but her program could not be changed to permit this.

She was shown exactly how to proceed with her work. The use of diagrams and pictures was explained; she was trained to use an index, taught how to find and "frame" an answer, and was drilled in reading for "thought getting." Several times a week, she was encouraged to follow a definite procedure or plan in getting answers and in correcting her own answers. Eventually, this procedure seemed to become habitual.

She was given permission to ask another girl in her division room for help whenever it was needed. The other girl was given instructions on how to work with her.

Work with Gussie was a very slow process but the improvement was steady and continued until she had methods of study fairly well learned. After Gussie once learned how to proceed in her work, her work remained at a constant level of mediocrity.

Gussie should be given credit for her persistence. She struggled along trying to do the work. A study program was outlined for her which included working at home on her lessons from six-thirty until nine, and using her study periods in school for review. She apparently followed the study program diligently.

As far as possible the work was simplified for her and it was arranged so that she spent most of her time getting specific material which she could grasp, instead of trying to learn general theories.

At the end of the semester, Gussie's work was passing. She had learned her Science, and she had also learned good habits of work. She might have done better if she had had a private coach or if she had been in a small class.

### Summary

Gussie was considerably below normal in mentality, having an I.Q. of seventy. By coaching Gussie, her work was raised to the ordinary level of passing. She was taught how to proceed with her work and given some training in how to study. She

accomplished the work required, and received her credit.

Chester

Chester was a large, heavy set, colored boy who would soon be seventeen.

He had entered the beginning Science class the year before, but had dropped out after a few weeks. During the previous semester, he once again entered the 1B class and, after something of a struggle, he had passed.

The investigator was rather well acquainted with Chester at the beginning of the semester, and felt almost sure that the boy was lazy. An intelligence test, given during the previous semester, had shown Chester to be about normal in mental ability so there was some reason to believe that he was able to do the work. Furthermore, when he had done very poor work for a few weeks, he would suddenly begin to do very fine work and continue for a brief period. There seemed good reason to believe that he had ability. The problem seemed to be to make him continuously use this ability to his advantage.

Chester was placed under observation at the beginning of the semester, and the study begun the previous semester was continued. He began the semester with great vigor. For a short time it appeared that he intended to try for the school honor society. Soon, however, his work slumped, and after this slump he accomplished little or nothing.

His father, who worked in the post office, had never answered any letter written him about Chester the previous

semester, but it was decided to write him once more. No answer was forthcoming, however, and he could not be reached by telephone.

After a week of particularly poor work, Chester was told to come in after school. He asked the obvious "What for?" but was intentionally misunderstood and the question was not answered. The remark that he was to come in after school was repeated. This made him rather angry but he said nothing more.

For reasons best known to Chester, he appeared that afternoon, claiming that he could not stay. He was told to sit down, that he knew what the difficulty was, that he was acting like an infant who belonged in elementary school, and that, as long as he persisted in acting that way, he could spend an hour after school each day and work on his lessons. No threats were made, but he was treated with some firmness.

The first day he did practically nothing. He was told to appear the next day, and he did accomplish a little work on the second day. The third day, as he seemed busy all period, he was asked to show what he had done. He had completely finished his day's Science assignment. At the end of five days of reporting after school, he promised faithfully that he would do his work regularly.

After this, he did make an attempt to keep his promise and do his Science work faithfully. However, his class work was not everything that could be desired.



He was smart enough to be ingratiating and apologetic in his attitude toward the teachers. This made it somewhat difficult to discipline him.

During the first semester, when the class had to take turns at using three or four microscopes, Chester would waste time by playing with the adjustments and by doing his best to spend the whole time at the microscopes. If urged onward, he did his best to have an excuse to waste more time at the microscopes.

He did develop a more business like attitude towards his work during the second semester. For a time, he persisted in playing with apparatus instead of actually working with it or making observations with it. Pupils were somewhat adverse to working as his partner on an experiment because he wasted so much time.

This attitude of the other students was called to his attention during the twelfth week, and he seemed somewhat surprised. It was suggested that he spend twenty minutes watching another boy do classwork. The observation seemed to give Chester a new view of things. From then on, he applied himself quite diligently to his experiments.

Near the end of the eighteenth week, he showed the investigator some extra work he had done outside the classroom. It was a piece of independent work and very well done.

At the end of the semester, his work was quite satisfactory. Chester would really work unwatched for an extended period. He could work as an individual, work with a small group, or work as part of the entire class.

He had developed the beginning of a scientific attitude. He could proceed carefully and intelligently toward a goal even though the goal was rather remote.

### Conclusions

Chester might well be termed lazy. He had normal mental capacity and no apparent physical handicaps. His attendance was satisfactory. By penalizing him for not working, his attitude was considerably improved and he finally did the required work. By an expose or explanation of his wasteful practices in connection with experiments, his bad habits were corrected. His habits of work and study improved, and he developed a good knowledge of his Science.

Bradford

Bradford was a tall, thin, colored boy in the ninth-hour class. He seemed to possess no apparent physical defects. In fact, he seemed typical of many of the freshmen boys who have started growing quite rapidly. He seemed unusually tall on account of his thinness. Perhaps the fact that his clothes were usually too small contributed toward the appearance of height.

He was taking 1A Science for the second time. He had failed in the investigator's class the previous semester and so he was sincerely advised to seek another teacher. However, Bradford said he wanted to stay in the class and so he was allowed to remain.

His case history was fairly well known to the investigator. He was slightly below normal in intelligence, but not enough below to interfere with his doing satisfactory work. His attendance was almost perfect. He was well acquainted with the methods and procedures to be followed in doing his work. His habits of study seemed quite good.

Apparently, he had two difficulties: he was lazy and he had the habit of "forgetting" the things he needed in class -- paper, pen, pencil, book.

Neither of these difficulties was regarded as very serious in his case. If he was growing rapidly (and he had been growing rapidly during the year), there might be a legitimate

reason for his lack of energy. The habit of forgetting might be a part of his apparent laziness. He might consider it too much effort to carry his supplies around with him.

He was observed during three class periods, and during a week of study periods in a study hall of which the investigator had charge.

During the class periods, Bradford seemed to be handicapped in getting started. On all three of the days that he was put under strict observation, he came to class without book, paper, pencil, or pen. This necessitated his borrowing these articles from his neighbors. After he procured the necessary articles, he worked rather consistently. He could find and develop the answers to questions, word the answer well, and make a presentable job of his written work. However, as it was necessary for him to spend from eight to eleven minutes getting supplies, much time was wasted.

During his period in study hall, he spent most of his time in rest. On four days of the five days, he put his arms on his desk, his head on his arms, and apparently composed himself for sleep. On each of these days, he had begun the period with a book open in front of him. The length of time he kept the book open ranged from three to nine minutes. He may or may not have been studying during the time the book was open. In each case, the book was an English book.

For four days he was not bothered and apparently slept.

On the fifth day, he was told to sit up and study. The result was that he kept the book open the entire period, turned the pages and it really looked as if he was reading the book. His eyes did not have that rather vacant stare which so often accompanies day dreaming.

When Bradford was questioned about the amount of sleep he had each night, he said that he usually went to bed about twelve and got up about eight. He claimed that he spent the evenings in reading or going to the movies. He professed to read a great variety of books, but these were not in evidence in school.

It was felt that a note to his parents might result in his retiring a little earlier in the evening. Such a note, explaining how tired he seemed and how his weariness interfered with his work, was sent to his parents.

A few days later Bradford came in and said his father now made him go to bed by half-past nine each night. It seemed that he did get a little more sleep at night and he was very much awake during class and during study.

As this problem of sleep seemed solved, it was thought wise to work on the problem of his not bringing supplies to class. He always had insisted that he owned paper, pencils, pen and notebook. (All pupils are supplied with free textbooks.) He usually claimed that these things were at home; at times, he said they were in his locker.

Sending him to his locker required quite a little time and often the missing articles were said to be at home. It was decided to write another note to his father, asking him to co-operate in getting the supplies to school. Again good results were obtained, and Bradford began coming to class supplied with all that he needed.

He was now well rested, and, as he had his supplies, he really began to accomplish things. The way was cleared of obstacles and he was encouraged to work. It is quite possible that his father gave him a lecture on having his supplies, for they were not often left in the locker after his father was asked to give help in this matter.

Bradford was on the way to success in the class. His previous training in Science was helpful to him. He developed an interest in the work and often would leave details of an experiment to be finished at home in order that he could do a little free-lance experimenting on his own initiative. His development was now quite satisfactory and he received his credit in Science.

### Conclusion

Bradford, a boy of normal ability, had failed in 1A Science the previous semester and was failing again during the semester this study was made. He seemed to have two difficulties -- lack of rest and lack of material for class work. His father

aided in correcting both difficulties. Once these difficulties were corrected, his work improved and he did satisfactory work. Apparently, his father was not aware of Bradford's need for more sleep. A rather bad habit of forgetting class material was corrected. It seemed probable that if Bradford was not given this help, he would have failed in his work a second time. He passed.

Bertram

Bertram was a small, quite, rather heavy-set colored boy. He was a member of a rather large family, having four brothers and a sister. They all lived at home with their mother and father.

Bertram was taking a General Language Course and had no definite idea of what he intended to do on graduation. He had some vague idea of going to a university, but was not at all sure of what he wanted to be when he left school.

He was failing in his work. His notebooks had been late in coming in and the work was of poor quality. His test marks were low, but showed possibilities. His recitations were few and mediocre.

Several times it was suspected that Bertram was not giving attention while experiments were being made for class demonstrations.

On a day when he brought a magazine of detective stories into the room, he was watched rather closely. It was found that he read the magazine during part of the class period. A few days later, he repeated this.

After class, he was stopped and asked about the experiment done that day. He knew nothing about it and his reading of the magazine was mentioned. He was shown his marks, and told something would have to be done to improve them.

The class experiments were well developed and should have



held the interest and attention of any normal student. The reading of the magazine, seemed to be merely the result of not being interested. Yet, he seemed interested in the apparatus around the room and often stopped at the desk before and after class and observed or worked with the apparatus.

It was noticed that he spoke with a rather loud voice. The possibility of his being deaf was considered and his voice was noted in the classroom. From this, it was decided that he did not hear well, and his seat was shifted to one nearer the front of the room.

The changed location was quite helpful. He seemed somewhat happier and gave complete attention thereafter. At times, he asked to have pupils repeat statements that they made in class, but apparently he could hear the other classwork all right. His English teacher also thought he was slightly deaf.

His notebooks were now better. But invariably there were unanswered questions on each problem. This seemed particularly true of questions that involved material from the book.

A period was spent with Bertram working through all the answers to a problem. Work was begun at the first question -- the question was talked over and an answer decided on, worded, and written down.

Questions that he found difficult were looked up in his textbook and in other reference books. Bertram was shown these reference books, their use, how to use the index, how to skim

pages of material until the desired subject was found.

The process of helping Bertram was repeated on three different days. At the end of this time, it was thought that he could probably work independently. He was given no help at all for a week, and then asked to show his notebook. During class each day, the work had been glanced over and it was seen that he was meeting no great difficulty.

His notebook was quite a revelation. The answers were very thorough and complete. In practically every answer, he had made use of some reference book with the result that the answers told a very complete story. Every question was answered. He was praised and told it was a big improvement.

On a test at the end of the week, he was among the upper-third of the class.

As he had a slight hesitation in his speech an attempt was made to arrange for him to receive help from a special teacher of speech who visits our school. However, as it was quite late in the semester, the seventeenth week, Miss P., the speech teacher, decided to wait until September when his program could be arranged better. He easily passed the work of the semester. He had found himself.

### Conclusion

Bertram, a boy of normal ability, was failing in his work. His failing was partly due to his deafness. A considerable

improvement resulted from a more favorable seating arrangement. Another improvement resulted after he had been shown how to do his work and was drilled in this.

According to his other teachers, his work also improved in their subjects, possibly as a result of a recognition and partial correction of his difficulties. His work for the semester was above passing.

General Statement

There were other students of whom studies were started but who left school before the end of the semester. These students were consistently absent during the time they were enrolled in school. One boy studied averaged three days of absence a week. When the students left school, the studies were left incomplete and are not reported here.

The studies that were completed were very helpful. Six students were enabled to pass who might well have failed if they had not been studied.

The material gathered from the reading was helpful in that it suggested procedures which could be followed. No one method seems applicable to all students.

In general, it seems that some of the students who are failed in school might be saved and standards maintained at their present level. It seems wise to observe the students at work for a time; and also to give an intelligence test. Each case seems to require individual study.

## BIBLIOGRAPHY

1. Adams, J. E. "Reaction of High School Pupils to High School Subjects." School Review, May, 1927. Volume 35, pp. 354-61.
2. Adison, P. "Some Facts About Non-Promotion and Subject Failures in Muncie City Schools." Indiana University School of Education Bulletin, September, 1929. pp. 28-32.
3. Alltucker, Margaret M. "What Can the Secondary School Do For the Student of Low I.Q." School Review, November, 1923. Volume 31, pp. 653-61.
4. Anderson, Charles and Davidson, Isobel. "Reading Objectives." Laurel Book Company, New York. 1925.
5. Anderson, W. A. "Study of Secondary School Examinations." Department of Secondary School Principals. 1929. pp. 52-55.
6. Armentrout, W. D. "Classification and Promotion of Pupils." Education, April, 1922. Volume 42, pp. 506-12.
7. Atkin, H. R. "When Is a Failure Not a Failure?" School Review, May, 1925. Volume 33, pp. 363-64.
8. Ayers, F. C. Editorial News and Comment. School Review, June, 1924. Volume 32, pp. 404-06.
9. Baker, Harry J. "Educational Disability and Case Studies

in Remedial Teaching." Public School Publishing Company,  
Bloomington, Illinois. 1929.

10. Baker, Harry J. "Characteristic Differences in Bright and Dull Pupils." Public School Publishing Company, Bloomington, Illinois. 1927.
11. Bennett, H. E. "The Text as a Factor in Poor English." Elementary School Journal, December, 1924. Volume 25, pp. 277-89.
12. Berry, C. S. "Intelligence Quotients of Mentally Retarded School Children." School and Society, June 30, 1923. Volume 17, pp. 723-29.
13. Book, William F. "Learning How to Study and Work Effectively." Ginn and Company, Boston, Massachusetts. 1926.
14. Bracewell, R. H. "Segregation in Ability Groups as a Means of Taking into Account Individual Differences." National Education Association Proceedings, 1921. pp. 674-75.
15. Branham, A. I. "Development of the American School Textbook." American School Board Journal, August, 1930. Volume 58, pp. 9-122.
16. Braun, R. "Vocabularies of History and Reading Textbooks." Department of Elementary School Principals Bulletin, April, 1931. Volume 10, pp. 408-11.
17. Breed, F. S. "Teaching the Class and Reaching the Pupil." School and Society, December 15, 1923. Volume 18. pp. 691-96.

18. Breed, F. S. and Breslich, E. R. "Intelligence Tests and the Classification of Pupils." School Review, January, 1922. Volume 30, pp. 51-66.
19. Brodie, B. "Our Failing Pupils." National Education Association Journal, June, 1930. Volume 19, p. 188.
20. Broady, K. B. "School Provision for Individual Differences." Teachers College, Columbia University, New York. 1930.
21. Brooks, Fowler D. "The Accuracy of Group Test Mental Ages and Intelligence Quotients of Junior High School Pupils." School Review, May, 1926. Volume 34, pp. 333-42.
22. Buckingham, B. R. "The Textbook and Its Vocabulary." Journal of Educational Research, September, 1926. Volume 14, pp. 142-45.
23. Burr, F. F. "Specialization in the Teaching of Science." Science, November, 1921. Volume 54, pp. 464-65.
24. Burton, William H. "Nature and Direction of Learning." D. Appleton and Company, New York. 1929.
25. Butler, J. H. "Why Homogeneous Grouping." National Education Association Journal, December, 1925. Volume 14. pp. 273-74.
26. Campbell, C. G. "Evaluating General Chemistry Texts." Journal of Chemical Education, December, 1931. Volume 8, pp. 2404-07.
27. Campbell, M. E. "Lowest Fourth." National Education Association Proceedings, 1927. pp. 840-45.

28. Carmichael, G. E. "Case of Reginald Doolittle." Independent Education, September, 1929. Volume 3, pp. 21-22.
29. Cast, G. C. "Elimination of the Unfit." School and Society, July 21, 1923. Volume 18, pp. 84-87.
30. Chipman, Catherine E. "Correspondence of School Achievement and Industrial Efficiency With Mental Age As Obtained by the Stanford-Binet Test." Psychological Clinic, March-April, 1929. Volume 28.
31. Colton, H. S. "Segregation of Zoology Students at the University of Pennsylvania on the Basis of Ability." School and Society, August 23, 1924. Volume 20, pp. 254-56.
32. Colvin, S. S. "An Introduction To High School Teaching." The Macmillan Company, New York. 1923.
33. Corrigan, E. J. and Kennedy, J. A. "A New Plan of Homogeneous Grouping." School Review, December, 1927. Volume 35. pp. 780-86.
34. Cowell, E. L. "Why Are More Boys Than Girls Retarded in School?" Elementary School Journal, October, 1928. Volume 29, pp. 96-105; November, 1928. Volume 29, pp. 213-26.
35. Cowley, E. B. "Challenge of Failure." School and Society, June 2, 1928. Volume 27, 665-67.
36. Cowing, H. C. "Failures in Our High Schools." School Review, December, 1927. Volume 35, pp. 760-66.



37. Crawford, A. B. "Incentives to Study." Yale University Press, New Haven, Connecticut. 1929.
38. Curtis, N. E. "Experiment With the Age of School Entrance." Elementary School Journal, February, 1925. Volume 25, pp. 411-12.
39. Cutright, P., Halvorsen, G., and Brueckner, L. "A Study of One Factor in the Grade Placement of Reading Material."
40. Davis, C. O. "Provision for Meeting Individual Differences Among Pupils in the Junior High School." School Review, September, 1926. Volume 34, pp. 510-20.
41. Davis, G. E. "Pupil Adjustment Through Supervision of Grading." National Education Association Proceedings, 1927.
42. Davis, I. C. "Analysis of the Subject Matter in the Eight Most Widely Used Textbooks in General Science." School Science and Mathematics, June, 1931. Volume 31, pp.707-14.
43. Dean, A. R. "Sense of Failure." Journal of Education, February 24, 1930. Volume 238, pp. 238.
44. Ditmars, T. "Intelligence Tests as a Basis for Classification and Grading." Education, September, 1923. Volume 44, pp. 33-39.
45. Dix, L. H. "Elimination of Repeating." Department of Elementary School Principals Bulletin, January, 1930. Volume 9, pp. 115-18.

46. Douglass, C. E. "Pupil Failures." Baltimore Bulletin of Education, April, 1930. Volume 27, pp. 145-48.
47. Eaton, H. T. "Scholarship of Pupils Who Left School." School and Society, August 19, 1922. Volume 16, pp. 221-22.
48. Eaton, H. T. "Intellect of Pupils Who Repeat." School and Society, February 3, 1923. Volume 17, pp. 139-40.
49. Engel, A. M. "Characteristic and Significant Differences Between X, Y, and Z Pupils in the Detroit Public Schools." Elementary School Journal, June, 1924. Volume 24, pp. 747-54.
50. Ettinger, W. L. "Facing the Facts." School and Society, November 4, 1922. Volume 16, pp. 505-12.
51. Flint, E. M. "Freshmen Fatalities." Educational Review, September, 1925. Volume 70, pp. 79-82.
52. Freeman, E. M. "Textbook Trends in Plane Geometry." School Review, April, 1932. Volume 40, pp. 282-94.
53. Freeman, F. N. "Basis on Which Students Can Be Classified Effectively." School Review, December, 1921. Volume 29, pp. 735-45.
54. Gardner, C. A. "A Study of the Cause of High School Failures." School Review, February, 1927. Volume 35. pp. 108-12.
55. Gardner, J. H. "General Science in the Fifties." Journal of Chemical Education, January, 1929. Volume 6, pp. 149-50.

56. Gilbert, M. M. "Some Thoughts on Failing Students." High School Journal, October, 1929. Volume 12, pp. 221-28.
57. Glueck, B. "The Nervous Child." Survey, November 15, 1923. Volume 51, pp. 185-89.
58. Goodrich, T. V. and Clements, S. L. "A Comparison of a Group of High School Failures with a Group of Successful Students." School and Society, December 15, 1923. Volume 18, pp. 715-20.
59. Gregory, R. "Teaching of Science." Science, October 20, 1922. Volume 56, 433-39.
60. Gruenberg, B. C. "Why Teachers Promote Students." School Review, February, 1922. Volume 30, pp. 91-92.
61. Hall, W. L. "Examinations in the Senior High School." American Educational Digest, March, 1927. Volume 46, pp. 234-38; April, 1927. Volume 46, 277.78.
62. Hawley, W. E. and Pechstein, L. A. "Diminishing Returns in Reducing Non-Promotions." Elementary School Journal, April, 1922. Volume 22, pp. 584-96.
63. Hayworth, C. C. "Homogeneous Grouping." National Education Association Proceedings, 1927. pp. 616-19.
64. Healy, W. "Individual Delinquent." Little, Brown and Company, New York. 1913.
65. Healy, W., Bronner, W., Baylor, E., Murphy, J. "Reconstructing Behavior in Youth." Alfred Knopf, New York. 1929.

66. Herriott, M. E. "The Selection of a Physics Textbook." Los Angeles Educational Research Bulletin, October, 1930. Volume 10, pp. 15-20.
67. Heck, A. O. "Administration of School Personnel." Ginn and Company, Chicago. 1929.
68. Hill, E. L. "A Citizenship Rating Scale." Education, February, 1927. Volume 48, pp. 362-71.
69. Hines, H. C. "Education of Mental Defectives in the Public Schools of Seattle." School and Society, February 24, 1923. Volume 17, pp. 216-21.
70. Hollingshead, A. D. "An Evaluation of the Use of Certain Educational and Mental Measurements for Purpose of Classification." Teachers College, Columbia University, New York. 1928.
71. Hollingworth, L. S. "The Psychology of Subnormal Children." The Macmillan Company, New York. 1920.
72. Hollingworth, L. S. "Special Talents and Defects." The Macmillan Company, New York. 1923.
73. Holmes, H. W. "The General Philosophy of Grading and Promotion in Relation to Intelligence Testing." School and Society, April 29, 1922. Volume 15, pp. 457-61.
74. Houston, G. D. "A Remedy for Retardation in the High School." Education, December, 1926. Volume 47, pp. 211-19.
75. Hunter, E. "Progress Report on Retardation Due to Over-

crowded Classes." National Education Association Proceedings, 1925. pp. 380-82.

76. Ingraham, E. G. "How to Judge Well Made Textbooks." School Executives Magazine, April, 1932. Volume 51, pp. 367-68.
77. Inskeep, Annie D. "Teaching Dull and Retarded Children." The Macmillan Company, New York. 1926.
78. Irwin, E. A. and Marks, L. A. "Fitting the School to the Child." The Macmillan Company, New York. 1924.
79. Jason, S. J. "Study Hall and the Slow Pupil." Bulletin of High Points, November, 1929. Volume 11, pp. 37-38.
80. Johnson, F. W. "A Checking List for the Selection of High School Textbooks." Teachers College Record, October, 1925. Volume 27, pp. 104-08.
81. Keboch, F. D. "Variability of Word-Difficulty in Five American History Texts." Journal of Educational Research, January, 1927. Volume 15, pp. 22-26.
82. Knowlton, P. A. "Comments on the Textbook in American Education." Educational Administration and Supervision, April, 1931. Volume 17, pp. 248-52.
83. Kornhouser, A. W. "How to Study." University of Chicago Press, Chicago, Illinois. 1924.
84. Kyte, G. C. "Calibrating Reading Material." Elementary School Journal, March, 1925. Volume 25, pp. 533-46.

85. Lake, V. C. and Holley, C. "The Recitation in a Science Type Subject." School Science and Mathematics, January, 1931. Volume 31, pp. 34-40.
86. Laton, A. D. "Psychology of Learning Applied to Health Education Through Biology." Teachers College, Columbia University, New York. 1929.
87. Laylander, O. J. "Forty Years of Textbook Progress." American School Board Journal, March, 1931. Volume 81, p. 47.
88. Lockhart, A. V. "Failure in High School." School Review, January, 1925. Volume 33, pp. 13-14.
89. Loree, D. H. "Methods of Discovering and Removing Specific Courses of Failure in Ninth Grade Science." School Review, May, 1926. Volume 34, pp. 377-86.
90. Lyman, R. L. "The Mind at Work." Scott, Foresman and Company, Chicago, Illinois. 1924.
91. Maddocks, C. W. "The Factor of Intelligence in School Failure." School Review, October, 1927. Volume 35, pp. 602-11.
92. Madsen, I. N. "Intelligence as a Factor in School Progress." School and Society, March 11, 1922. Volume 15, pp. 283-88.
93. Martens, E. H. "Better Classification." National Education Association Journal, May, 1923. Volume 12, pp. 174-75.

94. Massey, H. N. "Fallacy of Failure." California Quarterly of Secondary Education, April, 1930. Volume 5, pp. 263-66.
95. Maxfield, F. N. "Problem Children." Educational Research Bulletin, December 4, 1929. Volume 8, pp. 406-08.
96. Maxwell, C. R. "Choosing the Best Textbooks." School Executives Magazine, April, 1932. Volume 51, pp. 343-45.
97. McAndrew, W. "The Promotion of Children in the Chicago Public Schools." School and Society, April 9, 1929. Volume 25, p. 423.
98. McCormick, B. E. "A Study of Failures." School Review, June, 1922. Volume 36, pp. 431-42.
99. McDonald, M. F. "Methods of Classifying High School Students." School Review, January, 1923, Volume 31, pp. 3-6.
100. McGraw, E. L. "Problems of a Grade Adviser." Bulletin of High Points, April, 1929. Volume 11, pp. 45-46.
101. McMaster, D. "Case Studies of Failing Students in Seventh Grade Reading and Arithmetic." Pitts. U. School of Ed. Journal, Dec. 1929. Volume 5, pp. 39-46.
102. Merrill, J. "Reducing the Percentage of Failures in Detroit Elementary Schools Without Lowering Standards." Department of Elementary School Principals Bulletin, April, 1929. Volume 8, pp. 461-63.
103. Miller, H. W. "Segregation on the Basis of Ability." School and Society, July 16, 1927. Volume 26, pp. 84-88;

July 23, 1927. Volume 26, pp. 114-20.

104. Monroe, W. S. "Directing Learning in the High School." Doubleday, Page and Company, Garden City, New York. 1927.
105. Morrison, H. C. "The Practice of Teaching in the Secondary School." University of Chicago Press, Chicago, Illinois. 1926.
106. Mort, P. R. "The Individual Pupil." American Book Company, Chicago, Illinois. 1928.
107. Myers, G. C. "The Bright or Average Child Who Fails in School." Child Welfare, June, 1930. Volume 24, pp. 543-46.
108. Myers, G. C. "Teachers vs. Mental Tests." School and Society, September 9, 1922. Volume 16, pp. 300-03.
109. Nettels, C. H. "The Selection of a Textbook for B8 Science." Los Angeles Educational Research Bulletin, October, 1930. Volume 10, pp. 10-14.
110. Ohlson, D. "School Marks vs. Intelligence Ratings." Educational Administration and Supervision, February, 1927. Volume 13, pp. 90-112.
111. Olson, W. C. "Problem Tendencies in Children." University of Minnesota Press, Minneapolis, Minnesota. 1921.
112. Page, J. S. "Failures." Michigan Education Association Department of Elementary School Principals. Third Year Book. pp. 112-17.



113. Palmer, F. H. "Psychological Tests and Academic Salvage." Education, April, 1924. Volume 44, pp. 486-90.
114. Park, F. R. "A Grading and Promotion Plan Based on the Use of Intelligence and Educational Tests." Elementary School Journal, June, 1924. Volume 24, pp. 219-26.
115. Parr, F. W. and Nemzek, C. L. "Inefficient Silent Readers in College." Peabody Journal of Education, March, 1930. Volume 7, pp. 299-300.
116. Patty, W. W., and Painter, W. J. "Technique for Measuring the Vocabulary Burden of Textbooks." Journal of Educational Research, September, 1931. Volume 24, pp. 127-34.
117. Payne, W. L. "Methods in Teaching How to Study." School Review, October, 1930. Volume 38, pp. 598-604.
118. Peterson, A. "A Score Card for Judging the Value of General Science Textbooks." School Science and Mathematics, May, 1922. Volume 22, pp. 464-67.
119. Phillips, A. "Three Behavior Problems." Psychological Clinic, May, 1930. Volume 28, pp. 83-95.
120. Pickell, F. G. "Some Problems in Reorganizing Secondary Education." National Education Association Proceedings, 1923. pp. 1015-16.
121. Pieper, C. J. "Supervised Study in National Science." School Review, February, 1924. Volume 32, pp. 122-33.

122. Pieper, C. J. and Beauchamp. "Everyday Problems in Science." Scott, Foresman, and Company, Chicago, Illinois. 1925.
123. Pintor, R. "Intelligence Testing." Henry Holt and Company, New York. 1923.
124. Powers, S. R. "The Vocabularies of High School Science Textbooks." Teachers College Record, January, 1925. Volume 26, pp. 368-82.
125. Preston, H. "If Your Child Fails in Some of His Studies." Parents Magazine, February, 1929. Volume 4, pp. 16-17.
126. Prinsen, G. E. "Failure Prevention at Mayfair Branch." Chicago Schools Journal, October, 1926. Volume 9, pp. 55-58.
127. Pulliam, R. "Treating the Child Who Is Failing in School." Education, April, 1929. Volume 42, pp. 465-72.
128. Pyle, W. H. "A Psychological Study of Bright and Dull Pupils." Journal of Educational Psychology, March, 1915. Volume 6, pp. 151-56.
129. Pyle, W. H. "Psychology Study of Some High School Failures." School and Society, June 14, 1930. Volume 31, pp. 819-20.
130. Rader, L. W. "Scientific Selection of School Texts." National Education Association Department of Elementary School Principals, 4th Yearbook. pp. 298-304.

131. Raynor, G. J. "Why So Many Students Fail." School and Society, November 17, 1928. Volume 28, pp. 629-30.
132. Reavis, W. C. "The Administration of Failing Pupils in the High Schools of Seattle, Washington." School Review January, 1925. Volume 33, pp. 28-34.
133. Reed, H. B. "Psychology of Elementary School Subjects." Ginn and Company, Boston, Massachusetts. 1927.
134. Rich, S. G. "A Claim for New Procedures in Education." Educational Review, June, 1924. Volume 68, pp. 18-20.
135. Rogers, D. C. "A Study of Pupil Failures in Chicago." Elementary School Journal, December, 1925. Volume 26, pp. 273-77.
136. Ruch, G. M. and Stoddard, G. D. "Tests and Measurements in High School Instruction." World Book Company, Yonkers, New York. 1927.
137. Scates, D. E. "A Study of High School and First Year University Grades." School Review, March, 1924. Volume 32, pp. 182-92.
138. Schwesinger, G. C. "Why Children Fail At School." Parents Magazine, February, 1930. Volume 5, pp. 18-19.
139. Sheppard, E. T. "Study of Records of Two Hundred and Nine Unsatisfactory Students of a Freshman Class in the University of Chicago." Department of Secondary School Principals, January, 1929. Volume 24, pp. 30-33.

140. Smead, A. E. "An Experiment in the Classification of Ninth Grade Pupils According to Ability." School Review, November, 1927. Volume 35, pp. 673-75.
141. Smith, C. L. "Flunked Out." Independent Education, May, 1929. Volume 2, p. 21.
142. Smith, F. N. "What's Wrong with the American High School." School and Society, April 16, 1927. Volume 25, pp. 459-61.
143. Steadman, L. M. "Education of Gifted Children." World Book Company, Yonkers, New York. 1924.
144. Storm, H. C. "A Substitute for the Opportunity Room." Elementary School Journal, April, 1925. Volume 25, pp. 567-68.
145. Stryker, S. B. "Undergrading As A Cause of Delinquency." School and Society, December 24, 1927. Volume 21, pp. 821-22.
146. Sturiffer, E. C. "Remaining to Pray: Grouping Pupils According to Capacity." Educational Review, June, 1926. Volume 72, pp. 56-58.
147. Sunderland, A. H. "What's an Adjustment Room?" Survey, October 15, 1924. Volume 53, pp. 92-93.
148. Taylor, J. S. "Grading and Promotion." School and Society, April 14, 1923. Volume 17, pp. 405-09.
149. Terman, L. M. "The Measurement of Intelligence." Houghton Mifflin Company, Boston, Massachusetts. 1916.

150. Thayer, U. T. "The Passing of the Recitation." D. C. Heath and Company, Chicago, Illinois. 1927.
151. Thorndike, E. L. "On the Organization of Intellect." Psychological Review, 1921. Volume 28, pp. 141-51.
152. Thorndike, E. L. "Intelligence and Its Uses." Harpers Magazine, January, 1920. Volume 140, pp. 227-35.
153. Thorndike, E. L. "Word Knowledge in Elementary School." Teachers College Record, September, 1921. Volume 23, p. 239.
154. Thorndike, E. L. "The Teachers Word Book." Teachers College, Columbia University, New York. 1921.
155. Thorndike, E. L. and Symonds. "Difficulty, Reliability, and Grade Achievement in a Test of English Vocabulary." Teachers College Record. Volume 24, pp. 438-45.
156. Tregold, A. F. "Mental Deficiency." William Wood and Company, Chicago, Illinois. 1922.
157. Truman, E. V. "Coach in Every School." Journal of Education, April 28, 1930. Volume 111, pp. 473-74.
158. Unger, J. C. "High School Failures and How to Reduce Them." School Executives Magazine, March, 1929. Volume 48, pp. 297-300.
159. Vogt, P. L. "Why Students Fail." School and Society, December 21, 1929. Volume 30, pp. 847-48.
160. Wallin, J. E. "Intelligence Irregularities As Measured By

- Scattering on the Binet Scale." Journal of Educational Psychology, March, 1922. Volume 13, pp. 140-51.
161. Waples, D. "Procedures in High School Teaching." The Macmillan Company, New York. 1925.
162. Watson, E. and Phillips, A. "Studies in Diagnostic Teaching." Psychological Clinic, March, 1929. Volume 18, pp. 52-57.
163. Weber, O. W. "Methods Used in the Analysis of Textbooks." School and Society, November 27, 1926. Volume 24, pp. 678-84.
164. Whipple, G. M. "The Selection of Textbooks." American School Board Journal, May, 1930. Volume 80, pp. 51-53.
165. Whitely, P. L. "Comparison of Teacher and Student Estimates of Grades." School and Society, August 28, 1926. Volume 24, pp. 278-80.
166. Whitney, F. P. "Equality and the Schools." Education, Volume 33, pp. 84-90. Oct., 1912
167. Whitney, W. "Textbooks of Elementary Science." School Science and Mathematics, March, 1931. Volume 31, p. 265.
168. Winder, E. E. "Scientific Study of Homogeneous Grouping." School Life, November, 1926. Volume 12, p. 52.
169. Witt, H. A. "Classifying Your Pupils." Industrial Education Magazine, December, 1927. Volume 29, pp. 200-01.
170. Woodrow, H. "Brightness and Dullness in Children." J. B. Lippincott Company, Chicago, Illinois. 1920.

171. Woods, Elizabeth L. Los Angeles Educational Research Bulletin, October, 1930. Volume 10, p. 1.
172. Woodworth, R. S. "Psychology." Henry Holt and Company, New York. 1921.
173. Wooley, H. T. and Ferris, E. "Diagnosis and Treatment of Young School Failures." U. S. Bureau of Education Bulletin, 1923. No. 1., Government Printing Office, Washington, D. C. Volume 59, pp. 1-22.
174. Worlton, J. T. "Effect of Homogeneous Classification on the Scholastic Achievement of Bright Pupils." Elementary School Journal, January, 1928. Volume 28, pp. 336-45.
175. Wyman, W. T. "General Science Textbook Making." Science Education, October, 1931. Volume 16, pp. 29-31.
176. Ziegler, C. W. "School Attendance as a Factor in School Progress." Teachers College, Columbia University, New York. 1928.

Unsigned Articles

177. "Studies in Retardation." Elementary School Journal, December, 1924. Volume 25, pp. 242-44.
178. "Why High School Pupils Think They Fail." American Educational Digest, September, 1926. Volume 46, pp. 5-8.
179. "Sub-Normal Children." School and Society, May 10, 1924. Volume 19, pp. 547-48.
180. "Classification of Pupils in Baltimore Schools." School

and Society, February 16, 1924. Volume 19, pp. 186-87.

181. "Classification of School Children in Accordance With Ability." School and Society, February 5, 1927. Volume 158, p. 128.
182. "Failures in High School." School Review, September, 1922. Volume 30, pp. 487-88.
183. "Retention of High School Pupils." School Review, January, 1923, Volume 31, pp. 13-14.
184. "Reasons for Failure." School Review, October, 1923. Volume 31, pp. 568-69.
185. "Why Pupils Fail in High School." School Review, June, 1925. Volume 33, pp. 402-04.
186. "Grouping Pupils According to Ability." School Review, October, 1925. Volume 33, pp. 562-63.
187. "A Study of Maladjustment." School Review, December, 1925. Volume 33, pp. 727-29.
188. "The Affect of Acceleration." School Review, March, 1927. Volume 35, pp. 170-72.
189. "Helping Pupils Who Are Failing in School." School Review, April, 1927. Volume 35, pp. 251-52.
190. "A Study by High School Seniors of Failure." School Review, October, 1927. Volume 35, pp. 571-72.
191. "Individual Adjustment in High Schools." School Review, December, 1927. Volume 35, pp. 733-35.



192. "Plan for the Examination of Textbooks." American School Board Journal, June, 1929. Volume 78, p. 152.
193. "Forty Years of Textbook Making." American School Board Journal, March, 1931. Volume 82, p. 48.

The thesis "A Study of the Causes and the Treatment of Failures in Ninth-Grade Science," written by Arthur J. Fitzgerald, has been accepted by the Graduate School of Loyola University with reference to form, and by the readers whose names appear below with reference to content. It is, therefore, accepted as a partial fulfillment of the requirements of the degree received.

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